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NEWS SUMMARY

GENERAL

Five freed in Bogota siege

Guerrillas in the Dominican Republic Embassy in Bogota released five more of their hostages but threatened to blow up the building and kill the others if their demands for the release of 311 political prisoners and $50m are not met.

They are still holding dozens of hostages, including 13 ambassadors.

The five were released after a female guerrilla, accompanied by one of the ambassadors, had talks with two Foreign Ministry officials in a vehicle in front of the embassy.

Schmidt threat

West Germany may consider taking economic measures *against the Soviet Union* as part of the West's response to the invasion of Afghanistan, Chancellor Helmut Schmidt said. Page 2

Soviet offensive

Soviet troops and Afghan regular army units have attacked rebel strongholds in Afghanistan's eastern Kunar *province, said rebel leaders.*

Khomeini home

Iranian leader Ayatollah Khomeini left hospital after treatment for a heart ailment as agreement neared on the *terms under which the UN commission* investigating the exiled Shah's regime will be able to see the U.S. Embassy *hostages in Tehran.*

Soldier critical

British soldier was critically ill in Muenster, West Germany, after a military police patrol vehicle was fired on by two gunmen.

Olympics appeal

An Olympics boycott will lead to the collapse of the Olympic movement and a weakening of world sport, say ten British *Olympic medallists in an open* letter to the Government. Page 4

Rally peaceful

Three thousand police kept a National Front anti-mugging rally through South London almost trouble-free. There were just 10 arrests.

U.S. angers Israel

Israel may sanction the opening of a Jewish religious school in Hebron in retaliation for the U.S. show of support for the United Nations resolution demanding the uprooting of Jewish settlements on the occupied West Bank. Page 2

Tito still weaker

President Tito's heart grew still weaker and his doctors said in Belgrade that his general condition had worsened.

Mammoth task

Big-thinking sculptor Mihail Simeonov plans to become the first man to cast a live elephant in bronze — then make ten copies to sell at £109,000 each *to raise money to help save wildlife.*

Briefly . . .

El Greco painting, stolen from a Spanish museum last year, was found in the left-luggage department *of Madrid airport.*

Israeli national airline, El Al, today begins services between Tel Aviv and Cairo.

Three men were rescued by a Danish fishing boat three days after an explosion sank their boat in the North Sea.

Five hundred were injured in demonstrations against the dismissal of the government in *India's southern* Tamil Nadu state.

BUSINESS

Lack of steel has not yet hit output

● **STEEL STRIKE** *has had* little effect on the level of production in the rest of British industry after two months, the *Confederation of British Industry* reports. However, it confirms the view of the parallel FT survey of business opinion that confidence has been undermined. Back Page.

● **TUC LEADERS** will present *their 1980 economic review at* Wednesday's meeting of the National Economic Development Council and demand *radical changes in Government* policy. Back Page. Details of TUC proposals. Page 18

● **JAPAN'S** *semi-conductor industry* has caught its American rivals off guard by developing electronic memories claimed to be capable of storing four times more information than the best now available. Back Page

● **NEWSPRINT** *will cost about* 7 per cent more this spring because of the second price increase in less than a year. Page 4

● **DOMESTIC RATES** in England and Wales are likely to increase by an average 26 per cent in April. Page 4

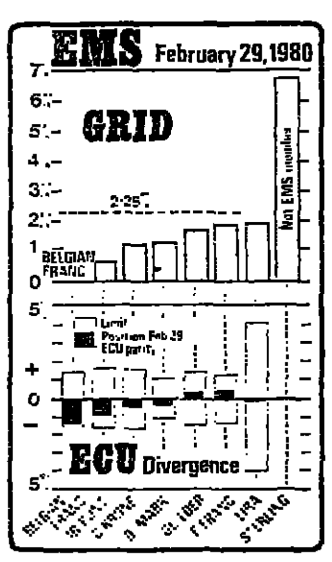
● **AIRFIX INDUSTRIES** is expected to go to the High Court today in an attempt to end occupation of the Liverpool Meccano factory. Page 6

● **CONSUMERS** spent 15 per cent more on food in the third quarter of 1979 than in the same 1978 period, says the Government. Page 4

● **MAPLE AND CO.** (Holdings), the furniture retailer, has advised its shareholders to reject the takeover bid of an unnamed company which values its ordinary capital at £8.4m. Page 14

CURRENCIES

● **EUROPEAN** Monetary System currency trading was dominated last week by the recent rises in interest rates, notably the West German and Belgian discount rates. The Belgian authorities also raised Treasury bill yields, but the Belgian franc fell to its warning limit against the ECU and the *Belgian National Bank* was obliged to intervene in the market to support its currency. The higher German discount rate *helped stabilise the D-mark,* which had been weak recently. The Italian lira lost a little ground towards the end of the week. The French franc made the most significant gain, followed by the Dutch guilder and the lira. The Irish punt was weaker, better than only the Belgian franc.



The charts show the two constraints on the European Monetary System exchange rates. The upper grid, based on the weakest currency in the system, defines the cross-rates from which no currency (except the lira) may move more than 2¼ per cent. The lower chart gives each currency's divergence from its "central rate" against the European Currency Unit (ECU), itself a basket of European currencies.

CONTENTS

For latest Share Index 'phone 01-246 8026

Two-year recession and workless near 2m forecast

By PETER RIDDELL, Economics Correspondent

The UK faces a short sharp recession over the next two years, at the end of which the inflation rate will have fallen only slightly and will still be well into double figures, while unemployment will be heading toward 2m.

The main burden is expected to fall on industry, which has to cope with a massive erosion in its competitive position caused by rapidly rising costs and a strong pound.

Industrial profits are expected to fall very sharply, and the financial squeeze on manufacturing could be as intense as in the mid-1970s.

This picture of almost unrelieved gloom is presented in a clutch of economic projec*tions produced coincidentally* this morning by several leading forecasting bodies outside Whitehall.

The list includes the broadly Keynesian National Institute of Economic and Social Research, the more monetarist London Business School, the Paris Organisation for Economic Co-operation and Development, and the Confederation of British Industry.

The only relatively bright spot, and it is important both politically and economically, is that in contrast to the mid-1970s recession real incomes and consumer spending should hold up reasonably well, and could even continue to rise.

The forecasters are broadly agreed about the direction of *the economy this year,* though there are differences about the length of the recession and, in the case of the OECD, about the chances of a small surplus, *rather than the generally* expected deficit, on the current account this year.

The projections are generally *similar, although possibly* slightly less pessimistic, than those recently produced in the Treasury.

There is major disagreement about what the Chancellor should do in his Budget.

The London Business School argues that there is no scope for relaxation of fiscal policy, and recommends a broadly neutral Budget, after adjusting the tax system for inflation, with public-sector borrowing of close to £10bn.

In contrast, the National *Institute says that fiscal expan*sion of between £2bn and £3bn is desirable to prevent further destruction of the industrial *base; reflation on this scale* would, it claims, make attainment of the monetary targets not impossible.

The Business School view is closest to that of Treasury Ministers. Indeed the Chancellor now hopes that, after taking account of the latest round of spending cuts and the cash limits squeeze, it will be possible to cut borrowing to not far

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COMPARISON OF FORECASTS
Percentage change from previous year

		National Institute	London Business School	OECD	CBI
Gross domestic product	1980	−0.5	−1.7	−2	−1.9
	1981	2.0	0.4	—	—
Consumer spending	1980	2.7	−0.7	0.5	1.1
	1981	3.0	−0.2	—	—
Consumer prices	1980	15.8	17.7	16.5	15.9
	1981	13.0	14.1	—	—
Adult unemployment fourth quarter	1980	1.58m*	1.65m*	1.7m†	1.7m†
	1981	1.84m	1.93m	—	—
Current account £bn	1980	−1.8	−1.7	‡	−0.7
	1981	−1.7	−1.71	—	—

* Figures for Great Britain. † Figures for UK.
‡ A "*small current account surplus*" is projected.

West to stage fake oil crisis

By Ray Dafter, Energy Editor

THE main Western oil consuming countries are to fake an energy crisis later this year to test their emergency oil-sharing plans. The exercise, organised by the International Energy Agency, will be the most ambitious test of its kind.

It will last two months and cost millions of pounds.

For the first time all 20 member countries of the IEA are *expected to take part, as well* as more than 30 major oil companies. Dr. Ulf Lantzke, director-general of the agency, said *it was hoped member countries* would also take the opportunity to test their individual emergency procedures.

The *aim of the exercise*—which will not affect fuel supplies to the public—is to see how the West could cope if their was another serious disruption to world supplies such as in 1973/74 with the Arab oil embargo and, to a lesser extent, in *1978/79* with the Iranian crisis

The IEA's emergency oil-sharing system is triggered automatically if any of its members' normal supplies are cut by more than 7 per cent. Since the IEA was formed in 1974, disruptions have not been serious enough to activate such procedures, although Sweden *came very near to it early last* year.

There will be four main objectives of the test, to be held *in October* and November:

● Continued training in use of the sharing system for governments, the oil supply industry and the IEA secretariat;

● Assessment of how the IEA system relates to European Community emergency plans;

● Assessment of the IEA system's reaction to unconventional supply disruptions, in*cluding a "creeping" crisis*, and

● Testing improvements and changes to the system since the last test in spring 1978.

The IEA has so far mounted two exercises. The first, in autumn 1976, involved only oil companies and the agency's secretariat. The 1978 test involved civil servants from 18 of the member governments.

So far Turkey and Australia have not taken part in any test. But the IEA management team *reported at its meeting* on February 4 that it hoped all 20 countries would take part this year.

The 20 are Australia, Austria, Belgium, Canada, Denmark, West Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States.

Japan moves to bolster the yen

BY RICHARD C. HANSON IN TOKYO

JAPAN'S Ministry of Finance late last night announced a major plan to defend the value of the yen. As part of a package agreed with the U.S., Switzerland and West Germany, the New York Federal Reserve is to help support the yen by using its own account and by making use of an existing $5bn foreign exchange swap facility with Japan.

The Japanese announcement, made suddenly by Mr. Noboru Takeshita, the Finance Minister, late on Sunday night, disclosed important measures to encourage the flow of capital to Japan, particularly from the oil-producing countries.

The Ministry was compelled to act after another sudden *drop in the yen's value on* Friday in overseas trading. In New York, it slipped to nearly 252 to the dollar from slightly *higher than 250 yen in Tokyo.*

Some private bankers contacted after the announcement said the measures would certainly "*shock*" up the yen in value, perhaps by five or six yen initially.

On the longer view, however, the market believes the Government may be forced to take other steps—most notably to increase domestic interest rates again.

The Finance Ministry plan consists of the following main points:

● The monetary authorities will continue their forceful market intervention in defence of the yen. It is believed the Bank of Japan last month sold about $1bn to hold the yen above 250 a dollar. This brought the foreign reserves down close to the $20bn level at the end of February, from *more than $30bn just over a* year ago.

● To facilitate its market intervention, the Japanese Government has won the co-operation of the Swiss, West Germans and Americans. In practical terms this means the New York Fed has agreed to sell dollars from its own account to support the yen in U.S. trading when necessary. The U.S. Treasury has also expresesd its willingness to activate a $5bn swap line which *the Japanese could use to bol*ster the yen. This was originally established as a line of defence for the dollar.

● To encourage the inflow of capital, the Finance Ministry has committed itself to some major liberalisation of rules governing capital movements. For the first time, Japanese banks with branches overseas *will be free to transfer Euroyen* deposits from these branches to their home offices, on an inter-bank transfer basis. This will eliminate the need to convert Euroyen deposits into Euro-dollars. Deposits in Japan will carry Euroyen interest rates.

● Japanese banks will be able to offer central banks, governments and international institutions flexible interest rates on free yen deposits (i.e., those held by non-residents). This is similar to what the Swiss authorities have recently allowed central banks, and is specifically aimed at attracting deposits from Arab oil-producing countries. Until now, all free yen interest rates have been strictly controlled.

● Also with an eye to the Arab oil producers, *Japanese companies* will be allowed, for the first time, to float yen-denominated private placement bonds overseas. This will help meet greater demand from the oil producers for ways to diversify their investments in Japan.

● The Finance Ministry has dropped restrictions on Japanese banks making medium- and long-term foreign currency loans to Japanese companies, once the exclusive reserve of the foreign banks operating in *Japan.*

The initial reaction of private bankers was that the measures are partly of a stop-gap nature necessitated by *market* pressures.

Other measures which the Government might wish to take (such as another increase in interest rates) will be delayed by Parliamentary hearings on the Budget.

If the authorities want to ensure that the yen defence package will have a lasting *impact, it is felt* further steep rises in official discount rates may be needed. The rate was increased by 1 per cent last month to *7.12* per cent, the fourth increase in a year.

A senior Finance Ministry official told the Financial Times last night that Japan did not think it wise to engage in an interest rate war with the U.S. and other countries as part

Interest rate pressures are not thought here to be a major factor in the present market because of widespread use of the forward discount in yen trading.

£ in New York

—	Feb. 29	Previous
Spot	$2.2580-2600	$2.2815-2830
1 mth	0.46-0.41 dis	0.50-0.45 dis
3 mths	0.95-0.90 dis	1.04-0.99 dis
12 mths	2.65-2.55 dis	2.80-2.70 dis

Commonwealth observers find Rhodesia poll 'fair'

BY BRIDGET BLOOM AND MICHAEL HOLMAN IN SALISBURY

THE BRITISH GOVERNMENT'S attempt to achieve a peaceful settlement in Rhodesia received important support last night when official Commonwealth observers endorsed Britain's handling of last week's general election.

The 11-member group, mandated by the Commonwealth after the Lancaster House conference to observe and report to heads of Government, declared that the three-day poll "was free and fair to the extent that it provided an adequate and acceptable means of determining the wishes of the people in a democratic manner."

Last Friday, an all-party British Parliamentary delegation concluded that the election results "will fairly reflect the general wish of the Zimbabwean electorate."

Yesterday, the group of 20 senior officials, including many former British ambassadors, appointed by the British Government to observe the election, publicly came to a similar conclusion.

Against an imperfect cease-fire in the seven-year guerrilla war, all three observer groups recognise, in the words of the Commonwealth report, that it would be "unrealistic and misleading to apply conventional yardsticks" *in assessing the* "unique and unparalleled situation in Rhodesia."

However, the three reports must *greatly* strengthen the hand of Lord Soames, the Governor, and of the British Government.

The endorsement will help Lord Soames to overcome the objections of any political party *that may decide it does not* want to accept the election results, to be published tomorrow morning.

At the weekend, Bishop Muzorewa, leader of the United African National Council, again *hinted that his party might not* accept the result, while a spokesman for the Rhodesian Front, whose 20 seats in the 100-member parliament might prove critical to any future coalition, declared that the election could not be regarded as free and fair because of "unhibited intimidation."

The three reports indicate that the election results are likely to meet international acceptance, despite the criticism levelled at Britain's conduct of the poll by Mr. Julius Nyerere, the Tanzanian president, among others.

Cabinet warned on bank profits

BY ELINOR GOODMAN, LOBBY STAFF

MR. ANGUS MAUDE, Minister responsible for co-ordinating the Government's communications, has sent his Cabinet colleagues a confidential memorandum warning them of the political sensitivity of the bank's windfall profits and advising them on how best to answer questions about them.

The memo reflects discomfort among Ministers over the size of the profits clearing banks are making as a result of high interest rates. Discreet pressure may be put on the banks to use some of their profits to help small business.

Within the last month, both National Westminster and Lloyd's have reported greatly increased profits, with Lloyds' profit on its UK business up 90 per cent. Some Conservative backbenchers have already demanded action to curb these profits, but any formal move towards either directing banks' profits into particular kinds of investment or taxing them would seem to be in direct contradiction to Conservative party policy.

Nevertheless, some Ministers believe it might be possible to persuade the banks to use some of their profits to finance higher risk business, particularly among small companies just starting up.

The Government is already setting up a small business loan guarantee fund, as suggested by the Wilson committee and repeatedly called for over the last few months by the small business lobby.

One idea now being floated within the Department of Industry is that the banks might be persuaded to collaborate with the Government in setting up such a fund, which would be used to guarantee loans from the banks to small companies that would not normally get one.

Budget incentives likely Page 4

Petrochemicals boost predicted

BY SUE CAMERON, CHEMICALS CORRESPONDENT

SALES of petrochemicals in Western Europe will grow at a rate of 4 per cent a year in the next ten years, said a report by Shell International Chemical at the weekend.

The group says the report is a direct contradiction of some pessimistic forecasts of the last few years which predicted a decline for the industry.

There will continue to be opportunities to substitute materials made from petrochemicals, such as plastics, for traditional ones from glass and steel.

It estimates that the petrochemicals industry will be able to grow at 1.5 per cent a year above the annual increase in industrial production, and expects industrial production to grow at an average of 2.5 per cent a year in five years.

It does not expect growth of the chemical sector to lead to heavy investment in new plant, at least in the short term. There is enough West European production capacity to meet the projected rise in demand until at least 1985.

The 4 per cent annual growth rate forecast by Shell compares with an increase in the petrochemicals industry of only 0.8 per cent a year between 1974 and 1978. The report says that the main reason for this was a poor investment climate and a generally depressed economic growth rate.

The report is based on a detailed survey of industries that use petrochemicals for other products.

Main industries studied were packaging, construction, textiles and transport, which *between them account for about* 60 per cent of petrochemicals consumption in Western Europe.

Relative cost was found an *important factor in the manu*facturers' decision to use petrochemical-based materials instead of traditional ones.

Though *petrochemical* prices rose substantially since the oil crisis of 1973, they were still competitive. There was no *significant evidence of manufac*turers going back to traditional

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U.S. vote on settlements angers Israelis

By Our Tel Aviv Correspondent

ISRAELI LEADERS reacted angrily yesterday to the U.S. show of support for Saturday's United Nations' resolution which demanded the uprooting of Jewish settlements on the occupied West Bank.

Feeling was reported running high among Government Ministers and some officials predicted an early gesture of retaliation.

Such retaliation, it is believed, could be expressed in a Cabinet decision to permit the opening of a Jewish religious school in the occupied Arab City of Hebron.

Since an Israeli soldier-student was shot in Hebron last month, Israeli extremists have been pressing the Government to permit Jews to take up residence inside the city, something not permitted in 13 years of Israeli occupation.

Until now, the Government has demurred at approving such a move in defiance of U.S. wishes. But it is thought that the new mood of Ministers after last night's American vote could be in favour of establishing the religious school in Hebron.

The matter would have been taken up by the Cabinet yesterday, but for a snowstorm which cut off Jerusalem and made a meeting impossible. The Cabinet session will now be held tomorrow and strong reaction to the U.S. move is expected.

Mr. Dan Pattir, spokesman for Mr. Menachem Begin, the Prime Minister, expressed disappointment at the U.S. vote. It came as a shock, Mr. Pattir said, because, although U.S. opposition to Jewish settlements on Arab land is well known, the U.S. Government has not until now actually voted to have existing Jewish settlements uprooted from the West Bank.

Other Israeli officials said Israel not only had a right to settle on the West Bank but needed to do so for security reasons.

Reuter adds: At least six people were killed in heavy fighting between Palestinian commandos and Lebanese army troops yesterday, doctors reported. The dead were said to include two Lebanese civilian passers-by, while the others were believed to be Palestinians.

Ford ready to battle for White House nomination

BY JUREK MARTIN, U.S. EDITOR IN WASHINGTON

FORMER President Gerald Ford, convinced that Mr. Ronald Reagan cannot be elected President of the U.S., yesterday indicated that if a broad cross-section of the Republican party were to approach him he would run again for the White House.

In an interview with the New York Times, Mr. Ford said he did not think "a very conservative Republican" such as Mr. Reagan "can win the national election," even though one could easily win the party's Presidential nomination.

"I hear more and more often," he said, "that we don't want, can't afford a replay of 1964"—when the conservative Senator Barry Goldwater went down in a landslide to President Lyndon Johnson.

The momentum Mr. Reagan gained from his big win last week in the New Hampshire primary appears to be spilling over into neighbouring Massachusetts, which stages its primary tomorrow. A Boston Globe poll published yesterday placed Mr. Reagan only three points behind Mr. George Bush, the erstwhile front-runner and native New Englander who had been counting on an easy victory in the state. The campaign then moves on to Mr. Reagan's natural territory in the south before hitting the big industrial states of Illinois and New York later this month.

Gerald Ford: an elder statesman

Mr. Ford has been comfortable in his retirement, enjoying his role as elder statesman and avid golfer. After much vacillation, he said in the middle of last year that he would not contest the early primaries, though he has never ruled out accepting a draft for the nomination.

But as he half-admitted in his interview, and as recent American political history has invariably demonstrated, those who stand and wait rarely end up with the Presidential nomination. If Mr. Ford delays declaring his intentions much longer, he will not be able to enter many primaries, in which candidacies must be filed early. In the meantime, Mr. Reagan might well be able to build up an insurmountable lead in advance of the later western primaries, above all in his home state of California, in which he reckons to do especially well.

Moreover, Mr. Ford's putative strategy also requires the complicity of other contenders—and there is no indication at this early stage that Mr. Bush or Senator Howard Baker, Congressman John Anderson or anybody else is willing to step aside in Mr. Ford's favour.

Schmidt pact on nuclear waste

BY OUR BONN CORRESPONDENT

WEST GERMANY'S state Premiers have agreed with Chancellor Helmut Schmidt on new guidelines for the disposal of nuclear waste. *This is an important step towards breaking the deadlock over Bonn's nuclear energy plans.*

Under the agreement the states will be able to approve the construction and coming on-stream of new nuclear plants until 1985, provided there are assured facilities for the interim storage of nuclear waste.

After 1985, the states will have to guarantee the availability of reprocessing facilities, or at least show they have found a site for reprocessing, before granting approval to new nuclear plants.

This understanding gives the Government an important breathing space in its energy programme and ensures that a nuclear "gap" will not develop over the next five years.

Until now, Bonn has urged the building of an integrated nuclear "park" at Gorleben, Lower Saxony, which would provide comprehensive storage and reprocessing facilities. That would have met the statutory requirements that each new nuclear power station can only be given the go-ahead if there is an appropriate plan for permanent waste disposal.

Problems arose last year when Christian Democrat-controlled Lower Saxony rejected the Gorleben scheme as politically unacceptable after local and national protest.

This raised the fear that the building of nuclear power stations might be delayed indefinitely and that existing ones would have to be shut, forcing Germany into even deeper dependence on imported oil.

These anxieties have not been dispelled entirely by the new guidelines, as they shelve the problem of how and where nuclear waste can be stored permanently or disposed of. But Lower Saxony has said it is willing to supply a site for the permanent storage of nuclear waste, provided that test drillings confirm that the chosen area is suitable.

The state of Hesse has been actively encouraging plans for a nuclear fuel re-processing plant. A consortium of West German power companies has filed a preliminary application to build a re-processor which would be capable of treating about 350 tonnes of spent fuel a year.

If the plans are approved, the *plant could be in action in five* to six years, coinciding with the 1985 deadline set by the federal and provincial Governments.

Lax Dutch N-security helped Pakistan

By Charles Batchelor in Amsterdam

AN embarrassing official report just released shows that lax security at Dutch nuclear installations probably allowed Pakistan to steal secrets which would allow it to develop nuclear weapons.

The report, prepared by officials from four Government ministries, revealed it was highly likely that Dr. Abdul Qader Khan, a Pakistani metallurgist who worked on uranium enrichment technology in the Netherlands, smuggled secrets out of the country. It also showed that Pakistan was able to order equipment from Dutch companies which could be used in the uranium enrichment process.

In a 41-page memorandum sent to Parliament the Ministers of Economics, Foreign and Home affairs and Justice revealed that the secrets leak was much more serious than was at first thought. The Dutch Government originally claimed that only unimportant information had been passed to Pakistan.

The report is embarrassing for the Netherlands, which has always taken a strong line against the proliferation of nuclear technology. Pakistan has not signed the nuclear non-proliferation treaty.

The report has already been sent to the British and West German Governments, who are partners in the uranium enrichment programme. "It is clear that the Government deeply regrets what happened," said the report, which will be debated in Parliament.

Dr. Abdul Qader Khan worked for several months in 1972-75 for Ultra-Centrifuge Nederland, the Dutch partner in the three-nation venture. It has an enrichment plant at Almelo in the eastern Netherlands.

The report recommends a tightening of security at Almelo and among the suppliers of sensitive materials and equipment. Controls on the export of know-how will be increased and the list of strategic materials dating back to 1963 will be revised.

$314m IMF credit for Philippines

By Philip Bowring in Manila

THE International Monetary Fund has approved a stand-by credit of 410m special drawing rights ($314m) for the Philippines. It may be drawn between now and the end of 1981.

Of the total, 333m SDRs will be from the fund's relatively new 7bn SDR supplementary financing facility and the rest from ordinary tranche drawings. The Filipino quota in the fund is 210m SDRs.

The supplementary facility is of longer term than all normal tranche drawings but more expensive as it is directly linked to market rates. It is still significantly cheaper than borrowing from commercial banks.

The new stand-by is the outcome of meetings in Washington in December at which the IMF seems to have listened sympathetically to the Filipino case. Conditions for the loan have not been disclosed but they are not thought to be any more onerous than those Manila was facing under an existing ordinary tranche stand-by and for those on borrowings under the extended fund facility which came to an end last year.

Originally the Philippines is believed to have been hoping for a new stand-by of 600m SDRs. But generally it has done well out of the fund, which is also understood to have agreed *that the country's commercial* borrowing ceiling for 1980 should be raised to $1.2bn from $975m last year. The Philippines is also availing itself of 90m SDRs under the compensatory financing facility.

Bourguiba names a Premier

By Susan Morgan in Algiers

PRESIDENT Habib Bourguiba of Tunisia has appointed Mr. Mohammed M'zali, aged 55, to o-ordinate Government activity and to act as interim Prime Minister. Mr. Hedi Nouira, Prime Minister for the past decade, was incapacitated by a stroke last week.

The crisis comes at a delicate stage for Tunisia. A month ago a Libyan-sponsored attack was made on the southern Tunisian mining town of Gafsa. But a specially convened meeting of Arab League Foreign Ministers last week failed to endorse Tunisian claims of Libyan aggression.

It is clear that, even if he recovers, Mr. Nouira, who was the designated successor to President Bourguiba, is unlikely to re-enter political life.

Bonn may take economic measures against Russia

BY ROGER BOYES IN BONN

CHANCELLOR Helmut Schmidt has for the first time publicly declared that West Germany may consider taking economic measures against the Soviet Union as part of the Western response to the invasion of Afghanistan.

The Chancellor's statement, made during a weekend speech, was deliberately vague and carefully combined with a warning against escalating East-West tension and a fresh commitment to solidarity with the U.S.

But the comments clearly show the Chancellor is determined to clear the air between Bonn and Washington before he flies to the U.S. tomorrow.

America has been urging Bonn to limit its export credit guarantees for trade with the Soviet Union as a gesture of economic solidarity with the U.S. So far, Bonn has resisted any radical reform of the system, arguing that German business with the East would collapse if credit guarantees were stopped.

Bonn's economic support for the U.S.—apart from directly strategic measures, such as shoring up Turkey—has thus been confined to a pledge not to take advantage of any trade lost by America because of embargo measures.

Over the past week the Chancellor appears to have deliberately set out to dispel U.S. anxieties about Bonn's support for the alliance. He announced last week, for example, that the defence budget would be raised to meet the NATO target of a 3 per cent real increase.

This, coupled with a general willingness to consider some form of economic sanction, should allow Herr Schmidt and President Carter to focus on the Afghanistan crisis without the distraction of intra-alliance irritation.

That is the earnest hope of German officials, who believe that two main issues must be settled within the Alliance — how lightly should a Soviet withdrawal be considered as a pre-condition for East-West negotiation and, second at what point does pressure on Moscow become counter-productive?

Overall plans for strengthening the West's position in the Gulf, the Middle East and Asia will also be discussed.

Britain seeks non-aligned support for Afghan plan

BY DAVID HOUSEGO

BRITAIN WILL seek wider support from the 86-nation non-aligned movement for its proposal for a neutral Afghanistan during talks in London today with an emissary of Mrs. Indira Gandhi, the Indian Prime Minister.

India has taken a common stand with Yugoslavia and Algeria—partners on the non-aligned movement—to reject any neutralisation based on super-power guarantees as this is seen as infringing Afghan sovereignty.

Britain will tell Mr. Eric Gonsalves, a senior Indian Foreign Office official, who has also visited Washington and Ottawa, that the European Community's formula for Afghanistan's future status is being deliberately kept fluid and could certainly encompass Indian views that Kabul should remain non-aligned.

The risk of a spill-over of the Afghan conflict was underlined at the weekend by violations of Iranian and Pakistani airspace by Soviet aircraft. Iran said two MiG fighters and a helicopter flew over the border in north-eastern Iran on Saturday. Pakistan said its own fighters fired warning shots.

Our Foreign Staff adds: Dr. Bruno Kreisky, the Austrian Chancellor, yesterday suggested that the non-aligned nations should ask their current chairman, Dr. Fidel Castro of Cuba, what he is doing to protect Afghanistan's status.

Giscard bid to boost Gulf ties

BY ROBERT MAUTHNER IN KUWAIT

FRANCE will attempt to lay the groundwork for closer economic and political co-operation between the European Community and the oil-producing Gulf States, during an official visit which M. Valery Giscard d'Estaing, the French President, is now paying to the region.

It is the first time that any French President has visited the Gulf States, and both sides have stressed that the talks which M. Giscard will have in Kuwait, Bahrein, Qatar, the United Arab Emirates, Jordan and Saudi Arabia will be important politically and economically.

Saudi Arabia was added at the last moment to the President's itinerary, to replace a visit which M. Raymond Barre, the French Prime Minister, was due to have paid to the Arab kingdom on February 23. M. *Barre's visit was postponed* because of King Khaled's illness, but the king has since recovered sufficiently to receive visitors.

The President's visit to Saudi Arabia is not official, but he will have one day of private discussions with both King Khaled and Crown Prince Fahd on March 10. The two sides will have an opportunity to exchange views on the results of M. Giscard's talks with other Arab rulers.

Apart from the Soviet invasion of Afghanistan, the security of oil supplies, and oil prices, it has become clear that the Arab-Israeli conflict and the future of the Palestinian people figures high on M. Giscard's agenda.

During the talks which M. Giscard had at the weekend with Sheikh Jaber Al-Ahmed Al-Sabah, the ruler of Kuwait, and Sheikh Saad Al-Abdulla Al-Sabah, the Prime Minister and Crown Prince, his Kuwaiti hosts emphasised they were more concerned about the Palestinian problem than Afghanistan.

The Kuwaitis regard France as the main Western supporter of the Palestinian cause and hope for a French initiative to break the deadlock on this problem. Persistent rumours that M. Giscard may meet Mr. Yassir Arafat, leader of the Palestine Liberation Organisation, during his stay in Jordan, have been neither confirmed nor denied.

Mr. Arafat has said he would meet the French president only in Paris or in his "own country." It is not certain whether Jordan would meet this condition.

The other big issue which M. Giscard is discussing during his tour is how the proposal, made by the Emir of Kuwait in June 1979, for a Euro-Gulf dialogue, can be given concrete form.

M. Giscard: Gulf security a major theme

In Kuwait, the French President and his hosts have been talking about the possibility of associating the developing countries with the European Community, the Gulf States and, possibly, Saudi Arabia.

The Kuwaitis are thinking in terms of an agreement which would cover the security of oil supplies, two-way industrial investments in Europe and the Gulf, and aid to developing countries.

The importance of M. Giscard's visit to the Gulf is underlined by the fact that he has brought four Ministers with him.

Reuter adds: Kuwait would be prepared to sell oil to the Soviet Union and other East European countries, the State's Oil Minister said yesterday.

WORLD TRADE NEWS

W. Germany finds cost of UK oil most expensive

BY ROGER BOYES IN BONN

BRITISH OIL exported to West Germany last year was more expensive that the crude supplied by any other top producing nation apart from Libya and Norway.

This picture emerges from the latest oil import figures released by the German Economics Ministry and will shore up Bonn's case that Britain, as a fellow EEC member, is charging too much for its oil. Britain has argued that it has been following oil price trends rather than leading the market and that, in any case, North Sea oil is of a particularly high quality and should be appropriately priced.

The West German figures show that Britain, Germany's fourth most important supplier (after Saudi Arabia, Libya and Nigeria), charged on average DM 290.73 (£72) per tonne of crude compared with DM 210.66 (£52.5) in 1978. Of the OPEC producers, only Libya charged more at DM307.70 per tonne while Norway, another North Sea producer and Bonn's ninth most important supplier, charged DM304.21 per tonne.

The figures indicate that Britain charged below the average price of the 12 top exporters to West Germany in 1978. Last year, however, it charged well above the average of DM 279.50 per tonne.

The higher oil prices have clearly swollen the Anglo-West German trade figures, a detailed analysis of which has just been released by the British Embassy in Bonn. British exports (fob) to West Germany rose last year by 36.7 per cent to £4.2bn — though that figure was still significantly below the sterling £5.7bn imports (cif) from West Germany.

Thanks largely to the increased sales of oil, raw materials and chemicals, Britain managed to increase its share of the total West German market to 9.9 per cent from 8.3 per cent

Quota test seen for GATT body

BY BRIJ KHINDARIA IN GENEVA

THE ROW between the U.S. and the Common Market over synthetic fibres, steel, Italian shoes and certain poultry products could be a blessing in disguise for the Tokyo Round package.

Although the dispute settlement machinery of the General Agreement on Tariffs and Trade (GATT) has not yet been called into action by either side, diplomats here expect that at least one of the conflicts—over synthetic fibres quotas—will come to GATT experts for arbitration.

"If the various agreements do have to be settled by panels set up under GATT'S dispute settlement procedures they could be blessings in disguise because they will provide the first major tests of willingness to properly apply Tokyo Round codes," a senior diplomat said at the weekend.

So far both the U.S. and the Community have kept their disputes out of GATT, awaiting the results of bilateral negotiations between themselves. If either side is left dissatisfied it can complain to GATT's decision-making council and ask for the creation of a disputes settlement panel.

It is not yet clear which provisions of GATT and the newly-concluded Tokyo Round package of trade agreements would be involved. The community has allowed Britain to curtail imports of synthetic fibres from the U.S. under GATT's safeguard clause—article 19.

The clause allows any GATT member to curb imports from any other provided that the imports clearly hurt domestic producers. The U.S. is expected to make a bid in the GATT council for compulsory compensation from the Community if bilateral talks end inconclusively.

Poland signs deals with Britain

FINANCIAL TIMES REPORTER

A GROUP of Polish power chiefs, led by Mr. H. Baktosiewich, the Minister for Power and Atomic Energy, left London at the weekend after a visit to the UK in which they signed co-operation agreements with the Electricity Council and three British companies.

The agreement signed with Sir Francis Tombs, the Electricity chairman, allows for the exchange of scientific and technical information leading to joint research projects on the automation of power stations, combined heat and power projects and the burning of low grade coals.

The framework agreements followed visits to GEC Power Engineering, Babcock Power and Northern Engineering Industries.

The party also attended a presentation on fluidised bed combustion at the National Coal Board headquarters in London. Its last call was to Foster Wheeler Power Products, a company which has pioneered the commercial use of the fluidised bed combustion process.

Poland has large amounts of low-grade brown coal, mostly open cast, available and is looking to Britain for know-how on the fluidised bed combustion principle in boilers.

This offers efficient conversion to heat using lignite and other low-grade coals while retaining sulphur dioxide and preventing atmospheric pollution.

Mr. Derek Hugh, the Foster Wheeler's export sales and marketing director, said it was hoped that some sort of agreement for co-operation would emerge following the Polish Minister's visit.

India to boost oil intake from USSR

NEW DELHI—India will import 1.7m tonnes of petroleum products from the Soviet Union this year under a contract signed between the Soviet Sojunest Export Company and the Indian Oil Corporation.

The contract provides for the import of 900,000 tonnes of kerosene and 800,000 tonnes of diesel oil, and the Soviet Union is likely to supply an additional 500,000 tonnes of diesel oil to India this year.

India has already contracted to import 1.5m tonnes of crude oil from the Soviet Union in 1980.

Meanwhile, Indian Government officials said Algeria will consider supplying crude oil to India from next year, and negotiations are under way for the import of 250,000 tonnes of petroleum products from Algeria this year.

India's total import requirement for 1980 is 16.5m tonnes of crude and 6.1m tonnes of refined products.
Reuter

BIRMINGHAM TRADE FAIR

India puts its industry on show

BY LORNE BARLING

INDIA'S FIRST industrial trade fair in Britain, to be opened today by Mr. John Nott, the Trade Secretary, may be seen by some UK companies as a Third World challenge to their activities, but it should also illustrate the largely ignored potential for joint venture deals between the two countries.

As the world's ninth most industrialised nation, India has developed a substantial light engineering industry, which wants to demonstrate the improved quality of its products this week at the National Exhibition Centre near Birmingham.

The fair is one of many which the Trade Development Authority of India has staged recently—in the U.S., West Germany and Denmark—but for the first time consumer goods are excluded and engineering products are being taken to the heartland of British industry.

The Trade Authority suggests that many of the products on show are those which have become unprofitable to produce in developed countries because of their relatively low added value and high labour input. Research has shown that there is a large market in Europe and the U.S. for these products.

Some Indian companies are now prepared to devote their whole output of goods to a single buyer's specifications, notably in the industrial fastenings sector, and many specialise in the supply of semi-finished components. However, there have been problems recently over steel shortages in India.

The Indian export effort has been encouraged by financial aid from the Swedish International Development Authority, which is backing the current exhibition, and by UN trade development funds.

But another purpose of the exhibition, aside from ensuring that the growth of exports continues in line with increasing production capacity, is to draw the attention of British companies to the type of goods which can be manufactured under joint ventures in India, often for sale in third countries.

Mr. Pradeep Laroia, the Trade Authority's West German-based European director, said that UK companies could benefit considerably by providing technology and equipment, often outdated by Western standards and of little value, for low-cost production in India. Although Indian law prohibits foreign majority ownership, the establishment of a joint venture marketing company in the UK or elsewhere means that British companies can have complete control over sales in third countries.

The most promising areas for exports are seen as the Middle East. Mr. Laroia said that one UK company was now investing around £1m in two plants to manufacture industrial fasteners in India, and more deals were expected.

The Staffordshire company, J. C. Bamford, is now investing £250,000 in a joint venture with Escorts, a major Indian company. JCB holds a 40 per cent share in the joint company, JCB-Escorts, which will produce a modified model of an excavator loader, initially with about half the components supplied from the UK, and later as a wholly domestic product.

Initial production will be about 80 a year, building up to around 250 a year under a programme phased in over five years. Sales will be exclusively in India at first, but there is provision under the agreement for exports at a later stage. JCB's returns from the venture will come in form of dividends paid by the joint company. Due to import controls there are virtually no excavator loaders being sold in India at present.

India's exports of engineering goods to Britain have risen rapidly in the past two years from around £11m in 1977-78 to £18.3m last year, and the Indian Engineering Promotion Council believes that this figure will continue to rise.

Products selling particularly well are hand tools for measuring, woodworking, metal cutting and hand-forced tools such as spanners, wrenches and pliers. Annual export growth of these products to world markets has been about 45 per cent a year since 1970.

Motor components are now being supplied to the U.S., West Germany, France, Sweden and Britain, with the annual value of production now at around £140m. Machine tools worth more than £10m are exported annually.

Overall, India's sales abroad have grown in value from about £350m in 1960 to more than £3bn last year, illustrating its emergence as an industrial force which should not be underestimated by British companies.

World Economic Indicators

UNEMPLOYMENT

		Feb. '80	Jan. '80	Dec. '79	Feb. '79
UK	000's	1,383.1	1,338.8	1,294.6	1,362.6
	%	5.7	5.5	5.3	5.7
		Jan. '80	Dec. '79	Nov. '79	Jan. '79
Germany	000's	1,036.5	866.8	799.0	1,171.4
	%	4.5	3.8	3.5	5.1
Holland	000's	232.4	216.7	209.5	229.0
	%	5.5	5.2	5.0	5.5
Italy	000's	1,681.0	1,662.9	1,623.0	1,730.6
	%	7.8	7.7	7.5	8.0
France	000's	1,485.4	1,468.9	1,472.7	1,356.2
	%	6.7	6.6	6.7	6.1
Belgium	000's	361.7	366.8	368.2	344.8
	%	9.1	9.2	9.2	8.6
U.S.	000's	6,425.0	6,087.0	6,039.0	5,883.0
	%	6.2	5.9	5.8	5.8
		Dec. '79	Nov. '79	Oct. '79	Dec. '78
Japan	000's	1,070.0	1,110.0	1,111.0	1,160.0
	%	2.07	2.17	2.15	2.26

SHIPPING REPORT

Tanker outlook still depressed

BY WILLIAM HALL, SHIPPING CORRESPONDENT

ONE OF the gloomiest pieces of news for the world tanker industry last week was the disclosure that a very large crude carrier (VLCC) had been tied up for a 12-month time-charter at $0.52 per ton.

This compares with rates of $2.50 per ton last November and a graphic reminder of just how depressed the industry is at the moment. At these rates, the operator is certainly not breaking even and it is a moot point as to whether the ship would be better laid-up.

Many of the ships awaiting cargoes in the Gulf are virtually laid-up, and the news that the Tung Group is bringing one of its VLCCs, Brazilian Faith, out of lay-up in Brunei Bay and sending it to the breakers' yards, indicates what some owners think of the market.

John I. Jacobs, in its latest World Tanker Fleet Review, finds it hard to be optimistic about the outlook for VLCCs. According to Jacobs, demand for ultra-large crude carriers (ULCCs) and VLCCs could be reduced by 10m-20m tons this year, and we may not see 1979 levels of demand return again until 1982.

By contrast, the dry cargo market is looking remarkably buoyant. Denholm Coates reports continued good demand for 20,000-60,000 tonners from the U.S. Gulf.

COMPANY NOTICES

CANADIAN NORTH ATLANTIC WESTBOUND FREIGHT CONFERENCE
CANADA-UNITED KINGDOM FREIGHT CONFERENCE

NOTICE TO SHIPPERS AND IMPORTERS FUEL COSTS

The member lines of the above conferences operating services between the United Kingdom, Northern Ireland and the Republic of Ireland and Canadian Maritime, St. Lawrence River and Great Lakes ports have continued to monitor bunker costs on a monthly basis and the results of this monitoring shows that the position as at 15th February justifies a reduction in the present level of bunker surcharge.

Accordingly with effect from 15th March 1980 the bunker surcharge applicable will be reduced to the following figures:
$6.80 per ton weight (1,000 kilos)
$4.85 per ton measurement (cubic metre) } As Freighted

The minimum bunker surcharge to apply to full container loads moving under services 1 and 2 will be reduced to:
20' containers— $79.50
40' containers—$118.50

The bunker surcharge will continue to be exempt from the conference currency adjustment factor and will not apply to Toronto/Hamilton additionals.

Any future changes to the bunker surcharge resulting from the monthly monitoring will be announced as and when warranted.

Atlantic Container Line G.I.E.
Canadian Pacific Steamships Ltd.
Hapag-Lloyd, AG.
Manchester Liners Ltd. } Joint
Golden Cross Line Ltd. } Membership
Dart Containerline Company Limited.
CANADIAN ATLANTIC FREIGHT SECRETARIAT LTD.
Secretaries.

Cunard Building,
Liverpool L3 1DS.
March, 1980.

CANADA-UNITED KINGDOM FREIGHT CONFERENCE
CANADIAN NORTH ATLANTIC WESTBOUND FREIGHT CONFERENCE

NOTICE TO SHIPPERS AND IMPORTERS NEWFOUNDLAND ARBITRARY CHARGE

The member lines of the above conferences wish to advise shippers and importers of traffic between Newfoundland and Great Britain, Northern Ireland and the Republic of Ireland that as a result of continually increasing operating costs it has become necessary to implement an arbitrary charge on cargo moving between Great Britain, Northern Ireland and the Republic of Ireland and Newfoundland via Maritime/St. Lawrence River ports.

These charges which will become effective on 15th May, 1980 apply between terminal Maritime/St. Lawrence River ports and terminal Newfoundland ports and will be as follows:

Full Container Loads
Eastbound—
$250.00 per 20' container
$250.00 per container exc. 20' in length
Westbound—
$850.00 per 20' container
$1,100.00 per container exc. 20' in length

LCL Cargo
Details with respect to LCL charges may be obtained from the undernoted lines.

Atlantic Container Line G.I.E.
Canadian Pacific Steamships Ltd.
Hapag-Lloyd, AG.
Manchester Liners Ltd. } Joint
Golden Cross Line Ltd. } Membership
Dart Containerline Company Limited
CANADIAN ATLANTIC FREIGHT SECRETARIAT LTD.,
Secretaries.

Cunard Building,
Liverpool L3 1DS.
March, 1980.

TENDERS FOR GREATER LONDON BILLS

1. The Greater London Council hereby give notice that Tenders will be received at the Chief Accountant's Office, (Bank Buildings), Bank of England, London, EC2R 8EU, on Monday, 10th March, at 12 noon for Greater London Bills to be issued in conformity with the Greater London Council (General Powers) Act, 1967, to the amount of £25,000,000.
2. The Bills will be in amounts of £5,000, £10,000, £25,000, £50,000, £100,000 or £250,000. They will be dated Thursday, 13th March, 1980, and will be due 91 days after date, without days of grace.
3. Each Tender must be for an amount not less than £25,000, and must specify the net amount per cent. (being a multiple of one new halfpenny) which will be given for the amount applied for.
4. Tenders must be made through a London Banker, Discount House or Broker.
5. The Bills will be issued and paid at the Bank of England.
6. Notification will be sent by post, on the same day as Tenders are received, to the persons whose Tenders are accepted in whole or in part and payment in full of the amounts due in respect of such accepted Tenders must be made to the Bank of England, by means of cash or by draft or cheque drawn on the Bank of England not later than 1.30 p.m. on Thursday, 13th March, 1980.
7. Tenders must be made on the printed forms which may be obtained either from the Bank of England or from the Council's Offices at The County Hall.
8. The Greater London Council reserve the right of rejecting any Tenders.

M. F. STONEFROST,
Comptroller of Financial Services.
The County Hall,
London SE1 7PB.
3rd March, 1980.

KINGDOM OF DENMARK

U.S.$25,000,000 5½% 20 YEAR EXTERNAL LOAN OF 1964

Bondholders of the above Loan are advised that the redemption due on the 8th April 1980 i.e. U.S.$1,660,000 Nominal, has been effected by purchase. The outstanding balance after the redemption is U.S.$6,740,000 Nominal.

The following Bonds from previous drawings have not yet been presented for payment:—

Bonds drawn for payment on 8th April, 1976:
1299 15171 22151

Bonds drawn for payment on 8th April, 1978:

67	122	224	301	302
1774	1950	2514	2580	4198
4363	11225	11398	12330	12460
13194	14882	14886	15033	15582
15718	15955	16545	17467	17479
18304	18307	21175	21559	23124

HAMBROS BANK LIMITED
3rd March, 1980.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the Society will be held in the Head Office, No. 28 St. Andrew Square, Edinburgh on Thursday, 20th March 1980 at 2.30 p.m. to consider ordinary business and also to consider and, if thought fit, to pass a Special Resolution enabling the Directors to call upon the Actuary to the Society to prepare a Valuation and Report regarding the financial position of the Society as at the end of each financial year or at such other date as the Directors may determine.

A copy of the Special Resolution can be inspected by any Member at the Head Office of the Society during normal business hours up to the date of the Meeting.

A Member of the Society entitled to attend and vote at any General Meeting is entitled to appoint another person to attend and vote instead of him. Proxies must be lodged at the Head Office of the Society not less than forty-eight hours before the time for holding the Meeting.

By Order of the Board.
A. M. ROBERTSON,
General Manager.
28, St. Andrew Square,
Edinburgh.

INCO LIMITED

NOTICE OF RECORD DATE

NOTICE IS HEREBY GIVEN that March 17, 1980 has been fixed as the record date for the determination of the holders of Common Shares and 7.85% Preferred Shares Series B who are entitled to notice of the Annual Meeting of Shareholders of INCO LIMITED to be held on April 16, 1980.

DATED March 3, 1980.

P. C. JESSUP, Jr.
Secretary.

LEGAL NOTICES

BANQUE DE CREDIT INTERNATIONAL
GENEVE
EN LIQUIDATION CONCORDATAIRE

Conformément à l'Article 43 de l'Ordonnance du Tribunal Fédéral du 11 avril 1935 concernant la procédure de concordat pour les Banques et les Caisses d'Epargne, les liquidateurs ont dressé un état du patrimoine réalisé et non encore réalisé au 31 décembre 1979 et un rapport sur leurs activités jusqu'à cette date et les ont transmis à la Commission des créanciers pour être communiqués à l'autorité de concordat.

Les créanciers pourront en prendre connaissance au Siège principal de la Banque.

15, rue du Jeu-de-l'Arc, 1207 Genève.
Genève, le 27 février 1980.

Les liquidateurs:
DELOITTE HASKINS & SELLS S.A.
CLAUDE MOREILLON
CHARLES WINTSCH

The following is a "free" translation of the above official notice:

INTERNATIONAL CREDIT BANK,
GENEVA
IN LIQUIDATION
UNDER SCHEME OF ARRANGEMENT

In accordance with Article 43 of the Ordinance of the Federal Tribunal of 11th April 1935 regarding the procedure in Schemes of Arrangement for Banks and Savings Banks, the Liquidators have drawn up a Statement of Assets Realised and not yet Realised as at 31st December 1979 and a Report on their Activities up to that date and have forwarded them to the Committee of Creditors for transmission to the Authority of the Scheme of Arrangement.

Creditors may inspect these at the Head Office of the Bank, 15, rue du Jeu-de-l'Arc, 1207 Geneva.
Geneva, 27th February 1980.

The Liquidators:
DELOITTE HASKINS & SELLS S.A.
CLAUDE MOREILLON
CHARLES WINTSCH

THE COMPANIES ACTS 1948 TO 1976
HOLDWOOD INTERNATIONAL (COSMETICS) LIMITED

NOTICE IS HEREBY GIVEN, pursuant to section 293 of the Companies Act 1948, that a Meeting of the Creditors of the above-named Company will be held at Winchester House, 100 Old Broad Street, London, EC2, on Tuesday, the 18th day of March 1980, at 12 noon, for the purposes mentioned in sections 294 and 295 of the said Act.

Dated this 20th day of February 1980.
By Order of the Board,
J. HAYWOOD, Director.

TRAVEL

GENEVA, Basle, Zurich and Berne, widest choice of cheap flights from 4 U.K. airports. Brochure FALCON 01-351 2191.

DIAMONDS FOR INVESTMENT

Diamond Selection Limited offer loose cut and polished diamonds as one of the finest and safest alternative investments. The following is a cross section of prices from their recommended range as at 1st March, 1980.

DSL Grade	Price in $ per Carat
80/4/165	21124
100/8/150	17429
140/10/140	16454
180/15/130	14009
300/20/120	12302
400/30/110	10482
475/50/101	9578
800/70/90	5766
1200/140/80	4312
1700/180/70	3349
22/275/60	23700
2700/800/50	1367

Note: Diamonds in the range we recommend for investment have appreciated an average of 650 per cent since 1st July, 1969.

DSL grade is made up as follows:—
Colour/Clarity/Carat
120 4 156
Make is always good/very good.
All stones are graded, certified and identiprinted in DSL laboratories using the finest measuring equipment and techniques.
Regular Seminars and teach-ins.
Brochure with procedure for buying and selling graded and certified diamonds is available from:

DIAMOND SELECTION LIMITED
Petersham House, 57a Hatton Garden, London EC1N 6JD. Tel. 01-405 8045.

EDUCATIONAL

LANGUAGE COURSES ABROAD

Combining language study with family or residence accommodation. FRENCH, GERMAN, SPANISH for young people 10 to 30 years.
All levels. Easter and Summer.
Apply: Euro Academy Ltd., Dept. FT, 77a George Street, Croydon CR0 1LD.
Tel: 01-681 2905/6.

LECTURES

GRESHAM LECTURES in Law
The Modern Conflict of the Laws
by Professor C. M. Schmitthoff
3 one-hour lectures at The Gresham College, Basinghall Street, London EC2 at 6.00 pm.
March 6, 13 and 20
ADMISSION FREE

Newsprint to be 7% dearer next month

BY WILLIAM HALL,

THE PRICE of newsprint is to increased by about 7 per cent. This is the second rise in less than a year, but in inflation terms newspapers will pay no more than in 1977.

The Scandinavian suppliers told their customers that prices were going up from March 1. The major Canadian producers increase their prices on April 1. The moves follow recent increases in North American prices.

Abitibi-Price, the world's largest newsprint producer, has *warned customers* that its price of standard newsprint is to rise by £15 to £270 a ton. Consolidated-Bathurst will raise prices by a similar amount.

In common with other suppliers both companies operate a rebate scheme, so that newspaper publishers are given a discount if the value of the *pound strengthens.*

The formula varies between companies. With Abitibi and Consolidated-Bathurst it means that the effective UK price will be about £231 a ton at current exchange rates.

Other newsprint producers are to cut nominal prices and alter currency rebate schemes. The net result is that effective price still goes up by about 7 per cent, to £231 per ton.

Swedish producers will cut their UK prices by about £15 a ton to £270, but increase the exchange rate when the currency clause becomes operative. This has been raised to $1.95. Finnish producers followed a similar course.

International Paper, the U.S. paper giant, is reducing UK *newsprint prices from* £280 to £245 a ton replacing its currency rebate with a fixed exchange rate of $2.15.

The rebate scheme was introduced when sterling was depreciating and newsprint suppliers wanted protection against losses.

The pound began to strengthen and newspaper publishers had heavy discounts. This *scheme* caused considerable hardship to UK newsprint producers, whose prices were reduced when costs were rising.

Ireland assembly hopes dwindle

BY STEWART DALBY

THE constitutional conference on Northern Ireland resumes today but, with power-sharing finally ruled out, hopes of any devolved assembly being restored this year have all but evaporated.

Over the week-end Mr. Ian Paisley, the main Unionist representative at the talks, made an unexpectedly vicious attack on Mr. Charles Haughey, the Irish Prime Minister.

In a speech unconnected with the conference, Mr. Paisley said: "Get the message tonight Charles Haughey. There will never be an all-Ireland so long as there is a Unionist and Protestant majority in Northern Ireland."

He added: "We would sooner die than permit you and your IRA to obtain your shared goal of an all-Ireland republic."

Last week Mr. Paisley put his proposals for any future Northern Ireland Government.

The DUP said any executive must be made up entirely by the majority, in practice the largely Protestant Unionist majority. The Roman Catholic minority would get representation through advisory committees.

Unacceptable

The principle of majority rule at executive level is unacceptable to Mr. John Hume, Social Democratic Labour Party leader and representative of the minority.

However, despite this wide difference the conference will go on. The SDLP wants to attend because it feels the conference gives it the forum for speaking to the Government.

Mr. Humphrey Atkins, the Secretary of State, has always insisted that this limited constitutional conference was just the first step in a long process.

Nevertheless, the Government's original hope now seems unrealistic. This was that the conference would end at Easter, with some kind of blueprint the Government could build on and submit to Parliament in the summer, with a referendum in the autumn.

The conference will almost certainly continue until July—this week item seven of a 13-point agenda is being discussed.

Budget concessions likely for profit sharing schemes

BY JOHN ELLIOTT, INDUSTRIAL EDITOR

TAX CONCESSIONS for profit sharing are likely to be included in the Budget as part of the Government's attempt to provide incentives for industry in what will otherwise be a fairly sombre package.

These concessions are likely to be linked with help for small businesses, to show that the Government wants both to increase the involvement of employees *in their places of work* and to help entrepreneurs.

Ministers have however yet to decide on the details and the Budget speech's provision for for entrepreneurs may depend on last-minute political considerations.

The Government has for example been coming under pressure, especially *from small* business lobbyists with Conservative Party links, to include a special guarantee scheme on bank loans for small businesses.

There have also been many calls for the profit-sharing tax concessions introduced by the last Government as part of the Lib-Lab pact to be extended.

The Confederation of British Industry recently told the Chancellor of the Exchequer that the existing provisions are "not sufficiently flexible and are administratively too complicated."

Since the concessions were announced two years ago, the Inland Revenue has approved only 68 company schemes and is still vetting 119.

These provide for employees to owns shares and gain tax concessions if they are held for long enough. A wide range of companies, incuding Marks and Spencer, British Sugar, ICI, and the Midland Bank have either introduced new schemes or modified older arrangements.

Now the Government is being asked to cut from ten years to five the period that shares have to be held to enjoy full tax exemption, and to reduce the compulsory ownership period before concessions come into force from five years to one.

The CBI has also said that maximum annual pay-out allowable for tax concessions should be increased from £500 to £1,000.

The main small business measures will concern capital taxation, although there have also been requests for special tax help for new companies. The idea of a special category of small firms' investment company, floated by the Wilson Committee on financial institu*tions, has been pushed* by the CBI too.

Lobbyists for worker cooperatives have also asked for any concessions aimed at encouraging the single entrepreneur to be extended to groups of workers who set up their own businesses.

New cars sell better than expected

By Kenneth Gooding,
Motor Industry Correspondent

THE continuing demand for new cars has surprised the UK industry and some forecasters believe original estimates of sales this year were too low.

Car registrations in February will top those for the same month last year by at least 10,000 and reach around 143,500. This follows the high January figure of 159,100, nearly 2 per cent ahead of the January 1979 total.

The industry's forecasters had expected a downturn in demand by now and privately see a need to revise the Society of Motor Manufacturers and Traders' estimate that car sales this year will drop to 1.5m from the 1.71m in 1979.

The society produced its forecast early in January and will stick with it at least until the Budget on March 26 at which stage the first-quarter sales total will be almost complete.

But there is a growing feeling within the society that the recession in the UK car business might take longer than expected to make an *impact, so that 1980 might* be better than forecast and 1981 worse. The recovery might well now not take place until 1982.

The importers' share of the February new car market dropped slightly from the January level, from 59.5 to 57.5 per cent.

To some extent this was because the Japanese were short of stock. Datsun, for example, had its worst February for six years and took only 4 per cent of the market against its usual monthly 6 per cent.

Ford remained market leader by a long way last month even though it could not keep up the pace in January, when it gained a 37.6 per cent share. Last month it was 32.25 per cent.

● From today 250 men will be laid off for three weeks in the transmission plant at the Ford Halewood factory on Merseyside. They will be paid up to 80 per cent of their wages.

Rates to rise by average of 26%

BY ROBIN PAULEY

DOMESTIC RATE bills in England and Wales now seem certain to rise by an average of about 26 per cent in April.

This is far higher than the Government had hoped and it means that dozens of local authorities will be *substantially* above the national uniform rate of 119p set last year by Mr. Michael Heseltine, Environment Secretary.

Based on these figures the average domestic bill would rise by about £40 a year, to £190.

The Association of District Councils has statistics from more than a third of the local authorities, showing an average rise of 25.96 per cent. The Centre for Environmental Studies predicted this figure when it analysed rate trends recently.

It means more than 100 authorities will levy a rate higher than 119p. This presents the Government with the problem of how to effect its threat to penalise high-spending authorities.

Newcastle upon Tyne leads the rates league with a proposed rate of 176.5p in the £ for 1980-81. A growing number of other authorities are moving into the 145p-155p range.

The notional uniform rate of 119p was used in calculating how much grant support the local authorities would get from the Government.

The formula for deciding which local authorities to penalise for exceeding it and how to calculate the penalty, which will involve withholding a portion for future grant, is still not clear.

Mr. Heseltine has already told local authorities that he envisages action against only 10 to 20, which means he will have to find a threshold far above 119p for a limit.

As he is politically committed to acting against high spenders, there is little possibility that he will back down although his measures are extremely unpopular with both Tory and Labour local authorities across the country. Many Tory areas will break the 119p line.

His most likely course of action now will be to wait until all the rate figures are known, *choose the top 12-15 and set the* threshold after them. This would mean a limit of about 150p in the pound.

He is anxious that the exercise should not be seen as an attack only on Labour authorities, although they will probably take the top ten places. So the threshold and number of authorities penalised can be expected to be a set at a level which puts at least one, and probably two Tory authorities beyond it.

BSC seeks support for retirement plan

BY ROY HODSON

THE British Steel Corporation will today try for an early end to the strike by canvassing support and funds for a scheme to offer steelworkers early retirement at 50.

Mr. Robert Scholey, BSC chief executive, and Dr. David Grieves, personnel managing director, will meet Viscount Etienne Davignon, EEC industry commissioner, and Mr. Henk Vredeling, social affairs commissioner, in Brussels to ask the commission to put up half the money for the scheme.

The prospect of index-linked pensions and tax-free lump sum gratuities is expected to add an important new dimension to discussions which, though currently stalled on a 14.4 per cent pay offer, have always been overshadowed by the corporation's intention to cut 52,000 jobs from the industry.

Mr. Adam Butler, Industry Minister, will visit Brussels tomorrow for talks on the British steel industry crisis. He will be in a position to follow through at the political level any tentative arrangements proposed between Mr. Scholey, Dr. Grieves and the two commissioners.

The early retirement plan would be expensive. But its backers claim it would be no more expensive than allowing British Steel to continue in its present over-sized and overmanned condition which, if not corrected, will force the corporation into losses of around £0.5bn a year.

Interest-rate test for Government

BY PETER RIDDELL, ECONOMICS CORRESPONDENT

THE GOVERNMENT'S desire to hold interest rates at the current level at least until the Budget is likely to be tested this week by continued upward pressure caused by severe shortages of liquidity in the money market. This may force the Bank of England *to consider providing* further assistance to the market.

The pressures may intensify today when £700m of Petroleum Revenue Tax is expected to be paid, further tax payments and calls on partly-paid gilt-edged stocks are also due in the next few weeks.

The shortage of liquidity has already resulted in a rise of ½ a point in money market interest rates in the last ten days.

This has made it much more difficult for the clearing banks to hold their base lending rates at current levels in spite of their reluctance to change rates when record profit increases are being announced.

The Bank of England said on Friday that the recall of £500m of special deposits temporarily released to the money market will be put off from this Friday until May 14.

In a comment written before Friday's announcement, stockbrokers James Capel suggested that the Bank will have to take even further action if a rise in base rates is to be avoided. This may require both a rolling over of the £500m gilt sale and repurchase arrangements with the clearing banks, due to expire next week, and additional facilities.

The brokers suggest that money market shortages will persist for most of the rest of the current banking month to March 19. However, money market conditions should ease in April. Minimum Lending Rate is unlikely to start to fall until mid-May at the earliest.

Food prices up 11.5% and 15% more spent

BY RICHARD MOONEY

CONSUMERS spent 15 per cent more on food in the third *quarter of last* year than in the same quarter of 1978, say Ministry of Agriculture figures today.

Excluding sweets, soft drinks, alcohol and pet food, household food expenditure averaged £6.67 per person a week, up 86p from the 1978 figure. It was 35p up on the April-June quarter.

In the same period overall level of food prices rose 11.5 per cent.

Consumption of meat, poultry and fish was generally higher; that of milk and dairy products down. A fall in consumption of white bread was more than compensated by rises for brown, *wholemeal and others.*

Household consumption of the main red meats, beef, veal, mutton, lamb, and pork rose to 17.14 from 15.75 ozs, while poultry rose from 6.34 to 6.93 ozs.

When allowance is made for movements in and out of domestic deep freezers, the rise in *meat consumption* appears much less strong. The adjusted total for red meats was 15.2 against 14.79 oz, and for poultry 6.59 against 6.43.

Liquid milk consumption slipped from 4.40 pints per person a week to 4.19, probably influenced by the June price rise and the strike affecting breakfast cereal sales, the Ministry says. Cereal consumption fell from 3.59 to 3.31 oz.

Cheese and butter consump*tion fell marginally, but more* margarine was eaten, particularly the soft variety.

The average Briton ate 1.06 oz less white bread, 24.14 oz, but made that up with a 1.25 oz increase to 8.71 oz of brown, wholewheat, wholemeal and other bread.

Fresh vegetable consumption *was down from the high level* in the third quarter of 1978. This was only partly made up by a rise for frozen vegetables. Fresh consumption fell to 32.88 from 34.27 oz, while frozen rose from 3.36 to 3.50 oz.

Tea and instant coffee made significant gains at 2.19 oz (2.05) and 0.55 oz (0.47) respectively. *Sugar consumption was down to* 12.18 from 12.89 oz.

Thistle Field output approaches peak

BY MARTIN DICKSON, ENERGY CORRESPONDENT

PRODUCTION from the Thistle Field is about to reach a peak after more than a year spent in overcoming pressure difficulties that reduced output.

Thistle Field, operated by the British National Oil Corporation, is one of the larger producers in the UK section of the North *Sea. Its rising output will be* significant in Britain's drive to*wards oil self-sufficiency,* expected to be reached this year.

Thistle opened production in February 1978 and was expected to build up rapidly to its forecast peak rate of 180,000 barrels a day.

However, pressure on the field from water deposits at its *periphery proved less than ex*pected. Production fell from *about 110,000 barrels a day to* 60,000 b/d by March last year. BNOC thus had to bring forward its plans to inject water into the field to maintain pressure.

Water injection began last April and production since then has risen gradually to stand at 114,000 b/d. A new production well, *the field's 13th, is about* to come into operation.

Medallists warning on 'collapse of Olympics'

A BOYCOTT of the Moscow Olympics would lead to a collapse of the Olympic movement and a weakening of world sport, says an open letter to the Government and sports bodies signed by 10 British Olympic medallists.

The medallists include Lynn Davies, Adrian Metcalfe, Alan Pascoe, and David Wilkie. Their appeal comes on the eve of a decision by Britain's Olympic committee on whether to send a team to the Moscow games. The Government wants the committee to delay the decision until after diplomatic moves to end the Afghanistan crisis.

The letter warns that if Government interference in sport becomes accepted, all international events would be subject to "government whim."

A boycott would also "topple the shaky financial basis" of the 1984 games scheduled to be held in Los Angeles.

Another appeal to the Government and British athletes not to boycott the Moscow games came yesterday from the British Youth Council, which represents more than 6m young people. Delegates to a meeting of the council condemned the Soviet invasion of Afghanistan but voted 59 to 36 against a boycott.

BL to launch Triumph TR7 hardtop

BL WILL launch its Triumph TR 7 open-top sports car, priced just under £6,000, at the end of this month writes **Ken Gooding.**

It is the first mass-produced sports convertible to be introduced in the UK since the Triumph TR 6 was launched 12 years ago.

The TR 7 with hard top was first sold in the U.S. in 1975 and introduced to Britain the following year. BL says the car has always been a money spinner, with £150m earned in foreign currency alone.

The soft-top derivative, already available in the U.S., is "expected to attract big sales in Europe and consolidate BL's status as the world's largest sports car manufacturers," the company stated yesterday.

BL is improving the specification of the hard-top TR 7, which will sell at £6,176.

Review ordered of law on misleading price tags

THE GOVERNMENT regulations banning display by retailers of misleading price comparisons are under review.

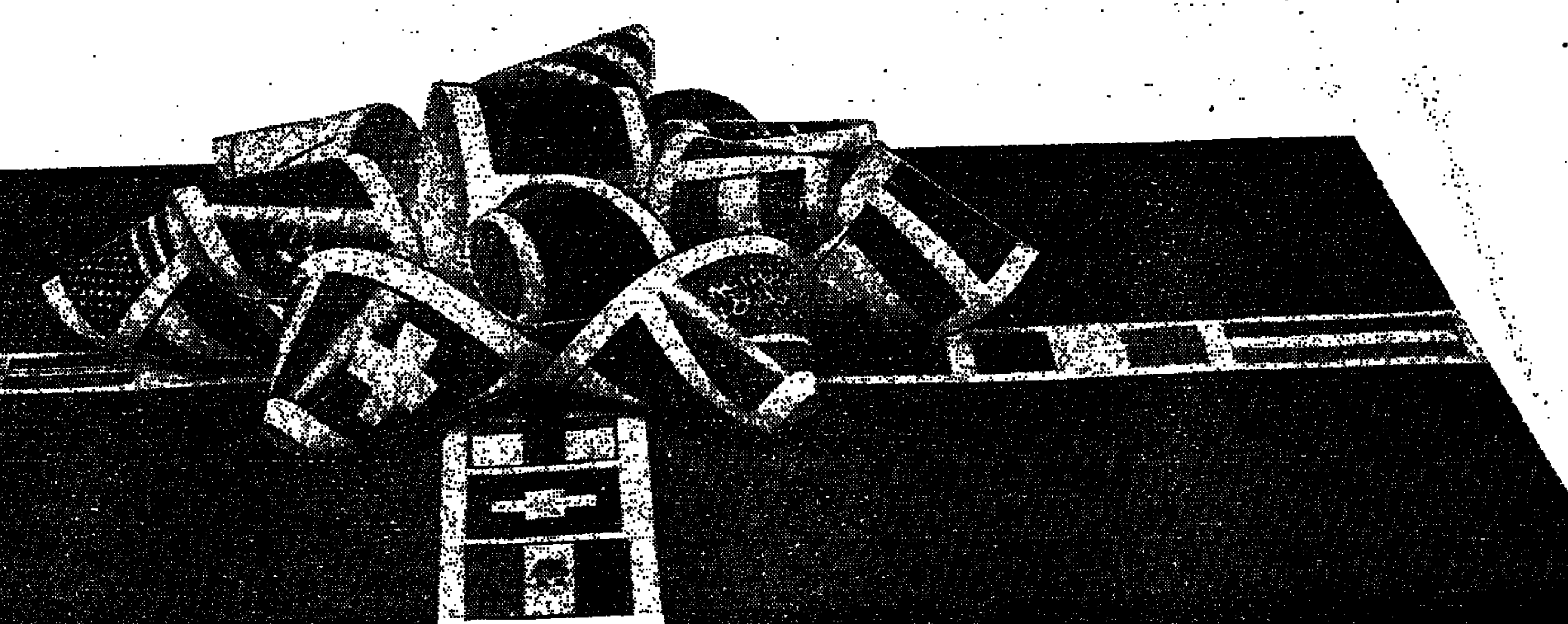
This follows wide criticism from the retail trade that the regulations, which came into force last year, are unenforceable and are being flouted by some traders.

Under the Price Marking (Bargain Offers) Order 1979, retailers of beds, domestic electrical appliances, consumer electronic goods, carpets and furniture must not make comparisons with manufacturers' recommended prices or other unsubstantiated figures.

The aim was to stop retailers claiming to have made big price reductions off a manufacturer's recommended price when that price was charged by few, if any, retailers.

Other misleading comparisons, such as *that goods are* "*worth*" more than the price charged, were also banned.

Since the regulations came in for beds last July and the other goods in December, it has become clear that many traders do not fully understand while others deliberately ignore them.



Imported Office Equipment

	1979
Hand held Calculators	72%
Ballpoint pens	60%
Typewriters	71%

Imported Household Goods

	1979
Toys/Games	51%
Heated Rollers	99%
Hairdryers	78%
Mirrors	60%
Clocks	61%
Furniture	22%
Carpets	16%
Vacuum Cleaners	31%

Imported Kitchen Equipment

	1979
Dry Irons	45%
Domestic Glassware	66%
Cutlery	70%
Saucepans/Frying Pans	36%
Kitchen Knives	40%
Toasters	61%
Electric Cookers	21%
Hand held Mixers	58%

Imported White Goods

	1979
Dishwashers	99%
Fridge Freezers	68%
Automatic Washing Machines	44%
Refrigerators	32%
Spin Dryers	28%

Imported Clothing/Accessories

	1979
Footwear	34%
Luggage (leather)	57%
Handbags (leather)	72%
Mens/Boys Tailored Outerwear	33%
Womens/Girls Outerwear	28%
Mens Shirts/Overalls	38%

Imported Leisure Equipment

	1979
Sports Equipment	74%
Bicycles	30%

Imported Audio Visual

	1979
Television B & W	50%
Television Colour	27%
Portable Televisions	53%
Record Players/Decks	51%
Portable Radios	96%
Music Centres	66%

Imported Vehicles

	1979
Cars	56%
Commercial Vehicles	23%

Import Trends

	1970	1979
Agricultural Machinery	22%	44%
Machine Tools	28%	48%
Construction Equipment	40%	71%
Mechanical Engineering	19%	32%
Textiles	14%	33%

BUY NOW, PAY LATER.

Buy something made outside Britain and we pay twice.

Once over the counter.

And again when we pay for the unemployment we're helping to create.

Each time we choose a foreign made product rather than one made at home, we drive another nail in Britain's industrial coffin. So why do we buy so many foreign-made goods?

It's true that there is sometimes no real choice. Whole industries that once flourished in Britain no longer exist.

And the trend for many other industries is looking increasingly unhealthy.

Things wouldn't be quite so bad if we were able to export our way out of trouble. But our exports are only growing at one tenth of the rate of our imports.

Right now it must be sensible for us to stop trying to pin the blame on each other. And start trying to put things right instead.

We could all make a start by buying British whenever possible.

This doesn't mean that we should choose British goods out of blind patriotism.

But that we should never ignore a British made product in the mistaken belief that it cannot be as good as a foreign one.

Foreigners find our defeatist attitude amusing. And extremely profitable.

They instinctively support their own industries by choosing home-produced goods.

Which is almost certainly why the problem is unique to Britain.

One industry at risk right now is the motor industry. An industry whose importance to Britain cannot be overestimated.

It brings employment to millions of workers. It trains most of our engineers. Indeed it is our biggest single manufacturing industry.

BL is the only British owned volume car maker. The other large manufacturers can, and do, switch car production away from Britain.

Not so BL.

Which is why it's so important for BL to succeed. And remain British owned.

Of course BL would have a tremendous amount to gain from a shift in attitude towards the British buying British.

But the problem doesn't just belong to the motor industry.

It affects us all. And it's striking deeper and deeper every day.

Not too long ago, our standard of living was the highest in the world.

Now we're not even in the top twenty.

The climb back will not be easy. But we can all begin today by taking a fresh look at British manufactured goods.

Next time you're looking to buy *anything*, but especially a motor car, see how the British product stacks up first. If then you find it doesn't suit you, we'll be surprised. But we'll have no complaints.

ISSUED MAINLY IN THE INTERESTS OF BL BUT ALSO ON BEHALF OF BRITISH MANUFACTURING INDUSTRY.

A Scargill grand design is seen . . .

Behind the Barnsley 'wipe-out'

BY PHILIP RAWSTORNE

MR. ROY MASON, Labour's former Ulster Secretary, was the first to admit, if not appreciate, the irony of his position last weekend as the Yorkshire miners and their Left-wing allies seized control of Barnsley Labour Party.

"The miners' union has a constitutional right to organise its membership and amass its strength," he said. "I would not be the MP for Barnsley if the union had not done it in 1953."

It was the National Union of Mineworkers' political muscle that gave him, a former miner, the Parliamentary seat, and that now threatens to push him from it.

The threat has not yet been voiced. Mr. Arthur Scargill, the Yorkshire miners' president, has refused to talk about any aspect of the party coup.

Publicly, he has neither accepted responsibility for its organisation nor pointed to its ultimate objective.

Events speak clearly enough, however. During the past year, a new branch of the local party was established at his union headquarters; miners have been encouraged to join their ward branches; of 190 application for party membership, 59 came from NUM members and 53 from the Worsbrough area of the town, where Mr. Scargill lives.

The result was, in a party with a total strength of 542, to increase the number of miners' delegates to the general management committee from 21 to 62.

With Left-wing allies from other branches, they commanded a majority at the annual meeting of nearly two to one over Mr. Mason's supporters.

What was described as "a wipe-out" followed. Mr. Ron Fisher, chairman, who had incurred hostility by describing some of the miners as "political prostitutes" was ousted by 108 votes to 58.

He was replaced by Mr. Norman West, a miner, a close friend of Mr. Scargill and widely tipped as the man who will challenge Mr. Mason for the party's candidature at the next election.

Mr. Theo Hinchcliffe, doyen of the party and its treasurer for 35 years, was removed to make way for another miners' nominee.

So was Judith Watts, secretary, although she retained an executive seat. The two vice-chairmen were replaced by Left-wingers and Mr. Scargill himself and other miners took ten of the 16 executive seats allocated to trade unionists.

They had intended to take all 16, but six nominations were withdrawn in an attempt to avert any angry reaction by other trade unions.

Mr. West said afterwards that he thought the new composition represented a fair balance.

It also happened to tip the scales in favour of Mr. Scargill and his supporters, giving them a majority on the 40-strong executive.

Mr. Scargill, without breaking any party rules, has secured a position from which he can dictate the choice of Barnsley's future Labour candidate for Westminster in the mandatory re-selection process.

From his past criticisms of Labour MPs, and NUM-sponsored MPs in particular, who fail to toe the lines laid down by Left-wing resolutions of the party conference or by his union, Mr. Scargill is hardly likely to see Mr. Mason as that candidate.

Mr. Mason has a reputation as a tough, independent man and is solidly established among the leaders of the party's Right-wing. Any overt move against him is likely to be delayed until the next general election is imminent.

Mr. Mason has kept cool and quiet, providing no excuse for his opponents to mount an immediate challenge.

However, Mr. Trevor Lindley, his agent, has made clear that the MP and the party's moderates intend to fight back vigorously.

There will be a drive to bring more of Mr. Mason's supporters among the town's Labour voters into party membership. If other trade unions alone asserted their full role in the party they could out-vote the miners, Mr. Lindley suggests.

Changes expected in Barnsley's parliamentary boundaries might also cut some of the ground they have gained from under the miners' feet.

Many believe that his Barnsley coup has been a testing model for a wider movement to strengthen the miners'—and his own—political base.

The NUM's political influence has declined in recent years in several Yorkshire area constituencies that cover predominantly mining areas.

Labour leaders nationally are apprehensive about the climate. The wind of change that has blown through Barnsley may, they fear, stir a stiff Left-wing breeze in constituencies outside Yorkshire.

Shipyard pay deal signed

MINIMUM EARNINGS for the 76,000 men in the UK's nationalised shipyards are to be raised from £80 to £96 a week for skilled workers and from £62 to £74.40 for the unskilled.

A revised agreement was signed in Newcastle yesterday between British Shipbuilders and the Confederation of Shipbuilding and Engineering Unions.

British Shipbuilders estimates that the rises, which will be in effect in full on October 1, will add £1.5m a week to its wages.

"There is no going back now," said Mr. John Chalmers, chairman of the union's shipbuilding negotiating committee. "The deal has been signed."

Referring to objections by General and Municipal Workers' Union members on some parts of the deal, which last week resulted in 1,100 *Sunderland Shipbuilders' men* voting to reject the February 13 agreement, Mr. Chalmers said: "We have closed ranks. That is our position."

Mr. Ken Griffin, British Shipbuilders' deputy chairman, said: "All unions have accepted the result of the negotiations."

Meccano court move likely

BY ALAN PIKE, LABOUR CORRESPONDENT

AIRFIX INDUSTRIES' management is likely to go to the High Court today, to try to end the occupation of the Meccano factory in Liverpool.

Under an agreement reached with union representatives on January 31, the company allowed the sit-in to continue until last Friday while efforts were made to find a buyer. But the deadline expired with 50 to 100 of the original 940 workers still in occupation.

Airfix says that, by Friday, more than 900 had accepted redundancy terms.

Mr. Mike Egan, district officer of the General and Municipal Workers' Union, said all vulnerable places were barricaded and the workers would resist any move to evict them.

Mr. David Linge, Amalgamated Union of Engineering Workers convenor, said the occupation had been peaceful throughout and, whatever moves were made, there would be no violence.

However, the company claimed that Mr. Egan and another union representative, Mr. John Lynch, had incited the workforce to continue the sit-in, although they were personally party to the January 31 agreement.

Mr. Ralph Ehrmann, chairman of Airfix, said: "We are extremely disturbed that two union officials have dishonoured the agreement reached with us. Their action will achieve nothing and will only damage their unions and make it more difficult to maintain employment on Merseyside."

A warning that Airfix would "take the necessary legal action to regain possession of the factory" was given after Mr. Derek Dodds, chief executive of Meccano, and the company's legal representative visited the plant, and were refused admission.

BL 'needs three years peace'

BY OUR LABOUR CORRESPONDENT

BL NEEDS three years without production dislocations, says Sir John Boyd, general secretary of the Amalgamated Union of *Engineering Workers.*

The three years would prove to the nation and the world that the company could be efficient and competitive, and that it could produce reliable cars with good back-up service.

Sir John, writing in the AUEW journal, said BL workers had the skill, experience, aptitude, versatility and desire to make a success of the company.

"*This* does not *mean* that every decision of management must be accepted without challenge as coming from an omniscient or omnipotent source, but it does mean that differences should be talked through and intelligent compromises effected without production being halted.

"Only by this attitude will we regain lost markets, reintroduce full employment and give job security. We must succeed."

However, Sir John warned that, whatever the eventual outcome of BL's pay negotiations, where the workforce has rejected the company's proposals, craft differentials must be improved.

The past 12 months at BL had been disappointing, he said.

BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
Current	*Camping, Outdoor Holiday Exhibition and Motor Caravan Show* (01-262 2886) (until Mar. 9)	Olympia
Current	Autoquip Exhibition (01-235 7000) (until Mar. 6)	Wembley Conference Centre
Current	International Contract Furnishing and Interior Design Exhibition (01-540 1101) (until Mar. 6)	Olympia
Mar. 3—6	National Mail Order Merchandise Show (0272) 292156)	Royal Horticultural Halls
Mar. 4—6	Automatic Laboratory Techniques Exhibition (01-855 7777)	West Centre Hotel, London
Mar. 4—15	Chelsea Antiques Fair (0727 56069)	Chelsea Old Town Hall
Mar. 4—29	Ideal Home Exhibition (01-353 4000)	Earls Court
Mar. 5—6	*Fire Protection Association LPG Conference and Exhibition* (0277 74290)	Connaught Rooms, London
Mar. 11—13	Microforum Europe (01-405 6233)	Wembley Conference Centre
Mar. 11—13	Ready-to-Wear Fashion Fair (01-637 2400)	Bristol
Mar. 17—21	Brewex '80—International Brewing, Bottling and Allied Trades Exhibition (021-705 6707)	NEC, Birmingham
Mar. 17—21	International Packaging Exhibition—PAKEX (021-705 6707)	NEC, Birmingham
Mar. 25—28	London Fashion Exhibition (01-385 1200)	Olympia
Mar. 26—28	Viewdata '80 Exhibition (0895 39262)	Wembley Conference Centre
Mar. 29—Apr. 8...	Birmingham Motor Show (0602 51202)	Bingley Hall, Birmingham
Mar. 30—Apr. 1...	British International Footwear Fair (01-437 6734)	NEC, Birmingham

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Mar. 1—10	International Art of Homemaking Exhibition (01-439 3964)	Paris
Mar. 2—5	European Fashion Fair (01-215 7877)	New York
Mar. 2—6	International Spring Trade Fair (01-734 0543)	Frankfurt
Mar. 2—9	International Agricultural Exhibition (01-439 3964)	Paris
Mar. 4—12	IMF 80 International Fair for Mechanical Handling (0727 63213)	Basle
Mar. 9—Mar. 16...	International Spring Fair (01-493 3111)	Leipzig
Mar. 10—13	International Footwear Fair (01-589 4891)	Elda
Mar. 15—21	World Photographic Exhibition—WORLD PHOTO (021-705 6707)	Singapore
Mar. 16—20	Middle East Business Equipment Show (01-486 1951)	Bahrain
Mar. 22—26	Confectionery, Chocolate and Biscuits (INTERSUC) (01-439 3964)	Paris
Mar. 23—31	Spring Fair (01-935 8200)	Dubai
Mar. 27—Mar. 31	Machine Tool Exhibition—METAV (01-409 0956)	Dusseldorf
Mar. 27—Apr. 5...	British Aviation Equipment Exhbn. (01-215 7877)	Shanghai
Apr. 7—10	World Fabric Fair (0532 469611)	Geneva
Apr. 13—15	MODEXPO '80: International Ladies Fashion Fair	Zurich
Apr. 16—24	Hanover Fair (01-651 2191)	Hanover

BUSINESS AND MANAGEMENT CONFERENCES

Mar. 3—4	FT Conference: World Motor Industry (01-236 4382)	Geneva
Mar. 4	The Institute of Directors: Are Chips Fattening? (01-940 4925)	Pall Mall, SW1
Mar. 5	British Printing Industries Federation: Books UK (01-242 6904)	London Press Centre
Mar. 5—7	SOCOPO: Facing Change in the 1980s—The Role of the Personnel Function (Worcester 353366)	NEC, Birmingham
Mar. 5—6	BIM: Getting to Grips with Mini and Micro Computers (01-405 3456)	Parker Street, WC2
Mar. 10—11	Government Research Corp.: U.S. Banking in 1985 (0444 51507)	Hyde Park Hotel, W1
Mar. 10—13	Compower Training School: JCL/Utilities for Operations Staff (Cannock 2511)	Cannock
Mar. 12	*Henley School for Forecasting: Forecasts for* Consumer Marketing Plans Short, Medium and Long Term (01-353 9961)	Carlton Tower Hotel, W1
Mar. 12	International Council of Shopping Centres: The Changing Face of Shopping (01-589 3422)	Hilton Hotel, W1
Mar. 13	PA International—The Successful Acquisition of Companies in the U.S. (01-581 2067)	Hilton Hotel, W1
Mar. 13—14	CCC: The Use of Offshore Financial Centres—The Netherlands and the Netherland Antilles (01-222 6362)	Lido de France, Jersey
Mar. 13—14	Eurotech: Office Planning and Design (Aldershot *313066*)	Sheraton Park Hotel, SW1
Mar. 17—21	Brunel Institute: The Effective Organisation (0895 56461)	Uxbridge
Mar. 19	LCCI: Industrl. Investment in Tunisia (01-248 4444)	Cannon Street, EC4
Mar. 19—20	CCC: Foreign Currency Assets and Liabilities (01-222 6362)	Royal Lancaster Hotel, W2
Mar. 19—21	Gower Conferences: International Insurance Conference (01-402 7121)	Amsterdam
Mar. 20	BACIE: The Impact of Microelectronics on Industry and Commerce (01-636 5351)	Connaught Hall, WC1
Mar. 24—25	FT Conference: Business Premises and Profitability (*01-236 4382*)	Hilton Hotel, W1
Mar. 26	Henley School for Forecasting: Costs and Price Forecasts to 1985 (01-353 9961)	London Press Centre

WEEK'S FINANCIAL DIARY

The following is a record of financial engagements during the week. The Board meetings are mainly for the purpose of considering dividends and official indications are not always available whether dividends concerned are interims or finals. The sub-division shown below is based mainly on last year's timetable.

TODAY
COMPANY MEETINGS—
Brentnall Beard, Founders Court, Lothbury, E.C., 11.30
Claverhouse Inv. Trust, 8, Crosby Square, E.C., 2.15
Dewhurst and Partner, Melbourne Works, Inverness Road, Hounslow, Middlesex, 4.00
Plastics Constructions, Birmingham Chamber of Industry and Commerce, 75, Harborne Road, Birmingham, 12.00
Stakis (Reo.), Normandy Hotel, Inchinnan Road, Renfrew, 3.00
BOARD MEETINGS—
Finals:
Blagden and Noakes
Ewer (George)
Fisons
Investment Trust of Guernsey
Isle of Man Enterprises
Royal Insurance
Interims:
Beradin Rubber
Victor Products (Wallsend)
DIVIDEND & INTEREST PAYMENTS—
Asarco Inc. 50 cents
Australia 7pc Reg. 79-81 3½pc
Birmingham Pallet 2.5p
Cook (William) Sheffield 0.6p
Damon Corpn. 5 cents
Hardy and Hanson 6.8p
Howard Shuttering 0.8p
IU International Corpn. 23¾ cents
Ingersoll-Rand 83 cents
K Shoes 1.765p
Midland Trust 2.45p
Palmerston Invest. Trust 0.594p
R.F.D. 0.8p
Richardson-Merrell 30 cents
Rickmansworth and Uxbridge Valley Water 10pcRed.Pf. 4.18pc
Scottish English and European Textiles 0.8p
Stewart Plastics 1.0204p
Tanganyika 5¼pc 78-82 2⅝pc
Tesco Stores 1p
Treasury 9pcCnv. 1980 4½pc

TOMORROW
COMPANY MEETINGS—
Alexanders Discount, 1, St. Swithins Lane, E.C., 12.00
BOARD MEETINGS—
Finals:
Aquis Securities
British Vita
Grindlays Holdings
Provident Financial
Rentokil
Unilever NV
Unilever
Interims:
Diploma
Helene of London
DIVIDEND & INTEREST PAYMENTS—
Claverhouse Invest. Trust 3.7p
Dentsply Intnl. Inc. 22 cents
M. and G. Dual Trust Income shares 8.65p

WEDNESDAY, MARCH 5
COMPANY MEETINGS—
Blundell-Permoglaze, Connaught Rooms, Great Queen St., W., 12.00
Leys Foundries, Colombo St., Derby, 12.00
Marley, London Road, Riverhead, Sevenoaks, Kent, 12.00
BOARD MEETINGS—
Finals:
Family Investment Trust
Hallam, Sleigh and Cheston
Kode Intnl.
Phicom
SKF (Aktiebolaget)
Interims:
AAH
Clark (Matthew)
Consolidated Gold Fields
Crossfriars Trust
DIVIDEND & INTEREST PAYMENTS—
Alcan Aluminium 60 cents
Alexanders Discount 11.501p
Gillette 43 cents
Provincial Cities Trust 0.71p
Rexnord Inc. 26 cents
Viroplant 5.25p

THURSDAY, MARCH 6
COMPANY MEETINGS—
Bluemel Bros., Wolston, Coventry, Warwickshire, 11.30
Grand Metropolitan Hotels, The Lyceum, Wellington St., Strand, W.C., 11.30
Warner Estates, Howard Hotel, Temple Place, W.C., 12.15
BOARD MEETINGS—
Finals:
Davies and Metcalfe
Galliford Brindley
Greenfields Leisure
Law Debenture
Needlers
Royal Dutch Petroleum
Sharpe (W. N.)
"Shell" Transport and Trading
Tavener Rutledge
Interims:
Hunt and Moscrop
Mitchell Cotts
Plessey
Staffordshire Potteries
DIVIDEND & INTEREST PAYMENTS—
Ault and Wiborg Db. 4½pc
Blue Circle Industries Db. 4½pc
British-American Tobacco Ln. 3½pc
Collins (G. and W.) Db. 4½pc
Croda Organic Chemicals Inc. 3¼pc
Dares Estates Ln. 4pc
East Daggafontein Mines 10 cents
Ford International Cap. Corpn. Ln. 3pc
G.T. Japan Invest. Trust 1p
Group Investors 1p
Hales Properties 1p
IMI Ln. 3¾pc
Marley 2.6p
Marchants Trust Ln. 2pc
Olympia Db. 3½pc
Peterborough Motors Db. 4¼pc
Raybeck 1.131p
Redland Db. 3½pc
Sears Engng. Db. 4½pc
Sheffield Twist Drill and Steel Db. 3½pc
Southvaal 140 cents
Waddington (John) Db. 5¼pc
Watney Mann and Truman Lns. 3½, 4pc
Whitbread Db. 4½pc
Yorkshire Chemicals Db. 5pc

FRIDAY, MARCH 7
COMPANY MEETINGS—
Braid Group, Grosvenor Hotel, Chester, 12.15
Dawes Group, Neville House, Hagley Road, Birmingham, 10.30
Lowe (Robert H.), The Roldane Mills, Congleton, Cheshire, 12.00
Record Ridgeway, Parkway Works, Kettlebridge Rd., Sheffield, 3.30
Rua Estates, Wrotham Place, Wrotham, Kent, 11.30
BOARD MEETINGS—
Finals:
Anglo American Gold Investment
Ault and Wiborg
Bridgewater Estates
Crouch (Derek)
First Guernsey Securities Trust
Interims:
Scholes (George M.)
Telefusion
DIVIDEND & INTEREST PAYMENTS—
AGB Research 2.5p
Agricultural Mortgage Corpn. Var. Rate 13¼pc Bonds 7/9/84 6⅝pc
Amalgamated Distilled Products 0.5p
BLMC Loans 3, 3¼, 4pc
Barclays Bank Intnl. Ln. 3¼pc
Bournemouth Var. Rate 1983 £7.375
Commercial Banking of Sydney 9 cents
Daily Mail and General Trust Ord. and A 15.728p
Dunlop Db. 3½pc
Fitzwilton 2p
Gough Cooper 3.5p
Grange Trust 2.25p
Greatermans Stores Ord. and A 25 cents
Highams Db. 3½pc
International Invest. Tst. 4½pcPf. 1.575pc
Lazard Bros. Sterling Reserve Fund Ptpg. Pf. 3.7p
Manson Finance Trust 1.5p
Ratners (Jewellers) 0.67p
Restmor 0.5p
Sainsbury (J.) Db. 3½pc
South African Land and Exploration 20 cents
Vaal Reefs Exploration and Mining 320 cents
Wellman Engineering Corpn. 1.6p
Western Board Mills 1.7p
Western Deep Levels 225 cents

This week in Parliament

TODAY

COMMONS—Companies Bill, completion of remaining stages. Motion on Road Traffic *Accidents (Payments for* Treatment) (England and Wales) Order 1980.

LORDS—Highways Bill, Statute Law Revision (Northern Ireland) Bill (consolidation measures) second reading. Bees Bill, third reading. British Aerospace Bill, second reading. Competition Bill, report stage.

SELECT COMMITTEES—Home Affairs. Subject: Deaths in police custody. Witnesses: Assn. of Police Officers, Met. Police, Police Superintendents' Assn. (Room 8, 4.30 p.m.) **Public Accounts.** Subject: Scottish Development Agency Accounts 1977-1978, 1978-79. Witnesses: Scottish Development Agency, Scottish Economic Planning Dept. (Room 16, 5.15 p.m.)

TOMORROW

COMMONS—Motions on Members' secretarial and research allowances. Proceedings on the Highlands and Islands Air Services (Scotland) Bill. Motion on the Prevention of Terrorism (Temporary Provisions) Act 1976 (Continuance) Order.

LORDS—Representation of the People (Variation of Limits of Candidates' Election Expenses) Order 1980. Criminal Justice (Scotland) Bill, report stage.

WEDNESDAY

COMMONS—Debate on Opposition motion on the damaging effects of Government cuts in employment and training opportunities when unemployment is rising steeply. Proceedings on the Slaughter of Animals (Scotland) Bill and Reserve Forces Bill (both consolidation measures).

LORDS—Debate on the lack of adequate home and civil defence. Debate on facilities for legal aid in juvenile court cases.

SELECT COMMITTEES—Education, Science and Arts. Subject: The funding and organisation of courses in higher education. Witnesses: The Association of University Teachers. National Association of Teachers in Further and Higher Education. (Room 6, 10.30 am). **Scottish Affairs.** Subject: Co-operation and overlap among agencies etc. Responsible for attracting inward investment to Scotland. Witnesses: Scottish Economic Planning Dept. (Room 5, 10.30 am). **Foreign Affairs.** Subject: The consequences of Soviet expansion for British foreign policy: The Olympic Games. Witnesses: British Olympic Association (Room 15, 10.45 am). **Industry and Trade.** Subject: Import and Export trade. Witnesses: Officials from the Departments of Trade and Industry. (Room 16, 10.45 am). **Transport.** Subject: European Commission's Green Paper on Transport Infrastructure. Witnesses: British Rail. (Room 8, 4.15 pm). **Employment.** Subject: The Manpower Services Commission's Corporate Plan 1980-84. Witnesses: Chairman and other officials of the Commission. (Room 6, 4.30 pm). **Public Accounts.** Subject: Selective Assistance to the Shipbuilding Industry. National Research Development Corporation Accounts. Witnesses: Department of Industry, National Research Development Corporation. (Room 16, 4.45 pm).

THURSDAY

COMMONS—New Hebrides Bill, second reading. Proceedings on the Consular Fees Bill and on the Police Negotiating Board Bill.

LORDS—Debate on the 27th report of EEC on policies for rural areas in the European Community and the 15th report on policy for agricultural structures. Debate on the report on European Institutions and on the Spierenburg reports. Debate on a World Commodities Centre in London.

SELECT COMMITTEE. Agriculture. Subject: Economic, social and health implications for UK of the CAP on milk and dairy products. Witnesses: Consumers in the European Community Group (UK). (Room 16, 11 am).

FRIDAY

COMMONS—Private Members' Bills.

The man who stood up for his principles

Nicholas Leslie meets Angus Murray, the non-executive director in the Pru v Newman case

Freddie Mansfield

Angus Murray: "a good non-executive director needs to have intellect, courage and integrity"

TO CREDIT businessmen with anything but fairly modest *qualities generally invites* a cynical reaction. So there are probably few people who could sound totally convincing when citing "intellect, courage and integrity" as being the essential ingredients in the make-up of a good non-executive director.

Angus Murray manages it, however. A bluff Scotsman, he has a down-to-earth manner that makes him totally convincing. He also readily acknowledges, with a wry smile, that the qualities he cites have been borrowed from a speech by Sir Winston Churchill, though he adds his own embellishment with the thought that "of course, of these qualities courage is the most important, for without it the other two characteristics are useless."

Murray is in a good position to know. For without him there may never have been a Newman Industries affair, which reached its climax in the courts last week when Mr. Justice Vinelott gave his reserved judgment in favour of Prudential Assurance in its action against two directors of Newman Industries (see this page, Tuesday, February 26).

In that case the judge accepted the Pru's allegations that a circular issued by Newman in 1975 had been tricky and misleading and that action by the two directors — Alan Bartlett and John Laughton — amounted to a conspiracy. The two directors had recommended that shareholders accept a proposal for Newman to buy all the assets and liabilities of a company called Thomas Poole and Gladstone China (except its holding in Newman), the stated value of which was judged to be misleading.

There are differing views as to what the role of non-executive directors should be, but there is generally a good measure of support for the theory that they should monitor the performance of the chief executive and oppose—publicly if necessary—any proposal which they feel is against the general interests of the company and its shareholders.

Murray subscribes to this view and it was his belief in the latter principle particularly that led him to make a stand at Newman. He has very clear-cut views not only on the role of non-executive directors—or "outside" directors as he prefers to call them—but of the composition of the board as a whole. For example, he believes there should be a reasonable balance of "inside" and "outside" directors and that the chairman (who should be an "outsider") should never combine that role with that of the chief executive of a company.

Given his principles, one might fairly ask how he came to be on the Newman board in the first place. Not only was Murray the sole outside director, but Bartlett combined the role of chairman with executive functions within the company. Murray says that he joined as a result of an invitation from someone he had known for several years in the belief that other outside directors were to be appointed and that the roles of the chairman and chief executive were to be separated. This, he says, never happened.

The period during which he was in dispute with the rest of the Newman Board—some eight months until he was ousted in February, 1976—he describes with some understatement as "most uncomfortable." The events certainly highlight the difficulties which any outside director must accept as his possible lot at some time or another.

Murray says he was tempted to resign from Newman early in 1975 after receiving what he felt were unsatisfactory answers to questions he raised on the Newman/TPG deal. He thought, though, that shareholders would have been "ill-served" *by such action* and stayed. He asked, unsuccessfully, for a merchant bank to be appointed to give independent advice on the proposed deal. Deloitte and Co., the accountants, were subsequently given this task, although the judge found that they had not been fully instructed.

Opposition

Next, an offer document relating to the Newman/TPG deal was sent out to Newman shareholders, unbeknown to Murray, and Murray tried, but failed, to postpone an extraordinary meeting called to ratify the deal while he circulated shareholders with his own views. He then resorted to contacting the Press in an effort to make known his opposition before the meeting. At this point, the Pru entered the arena by inviting Murray to a meeting of several of Newman's institutional shareholders.

Murray again contemplated resigning when shareholders ratified the deal at the extraordinary meeting, on the general principle that, if they were aware of his views but rejected them, he would have reached the end of the road so far as his duties as an outside director were concerned. However, he *subsequently changed* his mind because of the narrowness of the majority.

The Pru, meanwhile, had successfully pressed Bartlett for an independent inquiry to be conducted by merchant bankers Schroder Wagg and Jeremiah Harman, QC. This inquiry was eventually completed in February, 1976, at which time Murray was dismissed from the Newman Board because, he says, he refused to join the rest of the Board in accepting the inquiry findings when he had only seen extracts rather than the full report.

Murray's experiences throw the role of the non-executive into the sharpest relief, because he was operating at an extreme that few ever have to face.

But while the case illustrates the obstacles which non-executives *may* have to confront, it also raises the question of what degree of financial pressure they must reasonably expect to bear in pursuance of their principles. The legal costs of the Newman case are estimated at over £750,000, of which *the Pru's portion is* over £300,000. It is inconceivable, therefore, that an individual non-executive, or even a small group of two or three, could be expected to bear such costs.

Even without bearing such costs Murray had to meet a fair level of expense (mainly legal and effectively irrecoverable) in pursuing his case. He acknowledges, though, the assistance in this respect from Hambros Bank, with which he has long-standing connections, particularly through a non-executive directorship of Hambros Industrial Management.

Not surprisingly, Murray puts his strong beliefs in outside directors into practice. He is the non-executive chairman of Redman Heenan International and of Fairey Holdings (currently the subject of a bid from a consortium headed by Hambros Bank) and has several non-executive directors on both boards.

Broadly, he sees their role as ensuring that a company is being properly managed, a duty that includes the hiring—and if necessary, the firing—of the chief executive. But the freedom to exercise such a role "can only be brought about when there are sufficient outside directors who are not under the control of the chief executive," he says.

Another function is consultative, he says, whereby by virtue of their experience gained as executives in other companies, they assist a company board in the deliberation and formulation of judgments and strategies. They also, he says, act as "a watchdog."

Murray maintains that in their former capacity outside directors can be effective only if the executives trust them. And in the latter role, "if there is only a lone outside director he is on a hiding to nothing as a watchdog."

The responsibility for the constitution of the board rests with a chairman, he feels, not only in terms of balance of outside and inside directors but through the blending of experience. It is necessary, Murray maintains, to bring in outside directors whose strengths offset any weaknesses which may exist among the *inside, or executive, directors.* The chairman should also watch the age disposition "otherwise you can end up running out of directors all in one year."

Murray sees no real need to change the law regarding directors—*for example, despite the* differences in roles generally expected of executive and non-executive directors, their legal responsibilities are exactly the same. And perhaps because of this he has "no sympathy" for the idea—which Sir Brandon Rhys Williams, the Tory MP, is seeking to have added to the Companies Bill—of requiring non-executives to make a statement at annual meetings expressing their confidence in the executive direction and management of the company and in the way the assets are employed. "It is divisive, and it over-emphasises the watchdog role," Murray argues.

One of the arguments put forward against non-executive directors *taking internal* disagreements into the public arena is that doing so can harm a public company and can hit its share price, which in turn may damage the company's economic position.

Murray clearly has little sympathy for inaction. In the light of his experience he believes that, first, if there is a problem the outside directors must start by trying to resolve it internally. But if that proves unsuccessful, "they must present their case and information to shareholders." He does not believe that shareholders are uninterested in what goes on provided they get their dividends. "*When confronted* with the facts, shareholders are not apathetic," he says.

Cutback in British export promotion to Japan

With a Japanese industrial investment team arriving in Britain this week, Charles Smith examines the other side of the coin: Japan's low priority for UK exporters

WHEN Mitsukoshi, Japan's largest department store chain, sent a high-powered buying team to Britain last year to seek out attractive new consumer products, it came back with three suggestions: whitebait, kippers, and steak and kidney pie.

One of the lessons of this affair was that, while some British consumer goods makers have been trying hard to break into the Japanese market, almost everything they can offer is already being supplied from other European countries or the *United States.*

Capital goods seem to offer a far more lucrative opportunity, but British industry's assumption appears to be that the potential Japanese demand for such imports is so small as to be negligible. In fact, imports of goods components alone are already running at about £300m a year.

The point is reinforced by a report from the British Embassy *in Tokyo that there were more* than 300 applicants last year for participation in a British energy exhibition in Peking, many times the number interested in similar past events in Tokyo. Yet the Japanese market for UK goods *is far larger than China's, however* fashionable the long march to Peking may have become in the West.

A particular concern among British Government officials in Japan is that UK companies have still not realised how much effort their government is making to smooth the way into the Japanese market: for the last few years Japan has accounted for six per cent of the British Overseas Trade Board's budget, well above Japan's share of UK exports (two per cent at the last count).

The limited response by British industry to the rather lavish export programme of the past six years played a part in a recent decision to cut the programme's cost from the middle of this year.

Phasing out

One measure involves shifting *the British Export Marketing* Centres in Tokyo into partially rent-free accommodation in a Japanese Government trade centre (this is estimated to save about £1m over the five-year period for which the *accommodation has been promised).*

The other measure involves the phasing out as a separaate entity of the special "Exports to Japan Unit" which was established within the Department of Trade in 1973.

Officials who have been concerned with these two decisions deny that Japan is being downgraded in the BOTB's order of priorities from the very special position it held during the 1970s, the proportion of BOTB funds spent on trying to sell more British goods in Japan will still be above 2 per cent.

The British Export Marketing Centre and the Exports to Japan Unit were set up in 1973 after the Heath Government had decided that the way to tackle Britain's widening trade gap with Japan was to push exports rather than cut imports.

Holding a dozen or so officially sponsored exhibitions of British products each year, the BEMC has become a symbol of Britain's determination to crack the Japanese market (this is important because Japanese officials have an irritating habit of accusing European countries of "not trying hard enough" *to sell to them).*

Apart from its symbolic or psychological importance, however, the Centre's contribution to improving the bilateral trade situation is hard to judge. The gap in Japan's favour has grown steadily for the past five year's (see table); indeed there has not been a single year since 1973 in which the percentage growth of British exports to Japan exceeded that of Japanese exports to Britain. Another worrying point about the BEMC is that support for its activities from British industry has not been as great as originally expected.

The 500-square metre exhibition hall at the Centre can accomodate up to 25 exhibitors per show but the organisers usually have difficulty in persuading more than about half this number of companies to make the trip to Tokyo. Another disappointment has been the extent to which the BEMC has had to rely on consumer goods exhibitions rather than on capital goods it was originally designed to promote.

No fewer than 10 out of 12 *of the officially sponsored shows* in 1979 featured consumer goods, although at least four capital goods exhibitions were originally planned for the year. The British embassy in Tokyo says that more than half the exhibitors at consumer goods shows tend to be companies which are already doing well in Japan and are veterans of previous shows. Capital goods exhibitors are more likely to be newcomers—if they come at all.

The fact that relatively few companies have responded to the BEMC's invitations to exhibit in Tokyo has nothing to do with costs; the Centre is heavily subsidised and the exhibitor company has to pay only three hundred pounds for a package which includes free exhibition space, freight to and from the UK, and cut price air travel for two executives. What appears to be at fault is the machinery for publicising shows and rounding up would-be exhibitors.

The BEMC normally works through trade associations to select potential exhibitors, once it has been determined that there is a case for holding a show in any particular industry. The quality of these trade associations, however, varies widely as does their coverage. Sometimes trade associations whose membership includes only a portion of the major firms in a particular industry decline to have anything to do with other major companies in the same industry if they are not members.

Because of the frustrations experienced by the Centre during *its* six years of operation there was serious discussion last year about closing it down altogether and diverting the funds used for its maintenance (about £1.1m per year including costs at the UK end) to other kinds of export promotion.

One possible strategy might have been to put more official money into the staging of consumer goods exhibits in Japanese department stores so as to help established exporters of consumer goods (whose costs are coming under extremely severe pressure from the combination of a strong pound and the UK's domestic inflation).

In the end the BEMC was kept in being because of its value as a "flag ship" for British trade promotion efforts in Japan and because arguably, it has done a lot for some industries. A notable success story is the carpet industry which has held five shows at the centre and seen its sales go from £170,000 per year in 1972 to £2m in the first eight months of 1979.

(BRITISH CUSTOMS CLEARANCE FIGURES: £m)
UK-JAPAN TRADE

	UK exports	Change (%)	UK imports	Change (%)	Exports as % of imports
1975	308.5	—3.32	671.7	17.83	45.9
1976	359.5	16.54	795.8	16.5	45.2
1977	468.7	30.37	1,065.9	33.9	44.0
1978	542.3	15.71	1,283.3	20.40	42.3
1979 (Jan.-Oct.)	515.3	13.8	1,260.3	16.2	40.9

Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

● COMMUNICATIONS

Internal telephones easy to set up

IN MANY offices, department stores, supermarkets, etc., there is frequently a need for an in-house telephone network totally independent of the external Post Office system.

Many in-house systems are available, but most use conventional line communication techniques and tend to be costly and time-consuming to install.

To overcome this, Siemens is marketing an internal telephone system that is relatively cheap and simple to set up.

"Pamex" is the name of the equipment which comprises a range of modular exchanges and extension sets. The system uses time-division multiplexing for speech transmission, a technique that greatly reduces the amount of interconnecting wiring, and furthermore allows many additional features to be incorporated which are not possible on conventional in-house telephone systems.

In essence, the "Pamex" system is a versatile internal telephone network that can be built up or readily altered to suit differing and changing requirements.

The modular exchange system is based on the use of standard printed-circuit boards. Four exchanges are available with 20, 48, 80 and 240 extensions. Time-division multiplexing allows the transmission of two or more speech signals along a common pair of wires by using different time intervals for each speech channel. With conventional intercom systems multi-core cables are required, eg. a 20 pair cable.

The use of time-division multiplexing allows systems of more than 1,000 extensions or 19 speech channels to be assembled by compounding several independent exchanges.

Individual "Pamex" telephone extensions have push-button dialling and a fixed loudspeaker. A variant is available with a removable handset for more private communication.

Pamex has facilities normally available only on the most modern public telephone networks. For example, group calls to two or more extensions are possible and by dialling a given number, a group, general or paged call can be answered at the nearest exension.

A common number group facility allows up to nine extensions to be called on the same number and incoming calls allocated in the event of some extensions being engaged — this is a particularly valuable feature for stores or service departments. Another interesting feature is the conference facility.

Other features include priority calling, "call forwarding" to other extensions and automatic standby where the calling extension waits for up to 30 seconds for an engaged line to clear. To ensure maximum reliability a line control circuit disconnects defective circuits within four seconds of a fault occurring.

Siemens, Windmill Road, Sunbury-on-Thames, Middlesex W16 7HS. 09327 85691.

Versatile telex

A STREAMLINED method of dealing with telex messages from Ventek Computers should appeal to businesses such as shipping, exporting financial and commodity dealing, where sending and receiving these messages can be a time-consuming occupation.

Known as the Datashare Telex System, it runs on the company's Datapoint computer. The user composes his messages on a VDU screen using an ordinary typewriter-like keyboard.

When the message has been finalised, it is deposited in a telex electronic library and queued according to urgency. From this file the machine automatically selects messages for transmission, calls up the appropriate telex number and answerback code, and tries to dial the number. If it gets answerback it transmits, if not (or if it gets the wrong answerback) it tries again later.

When a message is received the procedure is reversed and the message appears on the screen as well as being printed, and it is also logged.

More from the company at Station House, Harrow Road, Wembley, Middx. HA9 6ER (01 903 6261).

● METALWORKING

Machining data store

A SEQUENTIAL read-out of previously stored machining data is provided by the Acu-Rite PRO system available from Universal Connections, 2, David Road, Poyle Trading Estate, Colnbrook, Bucks (Colnbrook 2464).

It gives the operator the option of working direct from a drawing or from data stored in the memory. Furthermore, if he decides to work directly from the drawing for the first piece, he can reduce set-up time and error by using the transfer feature to put the work program into the memory as he machines.

This device allows the operator to enter up to 166 movements per axis in two axis systems, or 125 in three axes. In addition, the memory will also accept up to 99 tool designations, nine of which can be programmed for tool offset dimensions.

If a component's design is altered, an editing facility permits the change to be made at any time, without re-entering the entire program. The operator can also recall any step in the program at any time, non-sequentially, so that he can machine non-sequentially if desired.

The unit will even compensate automatically for pre-determined shrinkage or expansion of workpieces.

PRO is provided with 200 hour battery-powered protection to prevent loss of programs from power failure.

● PACKAGING

Sticks when frozen

TRANSPARENT polyester film tape intended for centre sealing and peripheral wrapping of cartons has been introduced by 3M; it is able to retain a high level of adhesion when frozen, making it ideal for cold storage applications. Designated Y3523, it can be applied in sub-zero as well as room temperatures. The tape is available in 55 metre rolls, 38 or 50 mm wide, in cartons of 24.

A second tape, Y8951, has added strength due to glass reinforcement and also exhibits very little stretch. It should prove useful for cold storage palletising applications and for reinforcing fibreboard containers at low temperatures. Additionally, high backing strength and good moisture resistance make the tape suitable for sealing paper or plastics films used in low temperature packing. This product is supplied in 50 metre rolls 12 mm wide packed in cartons of 72.

More from Packaging Systems, 3M United Kingdom, P.O. Box 1, Bracknell, Berks. (0344 58395.)

● SECURITY

Protects valuable data

CHUBB believes that the majority of small business computer users are not fully aware of the risk they are running if their premises catch fire and the computer programs and data, probably held on floppy discs, are destroyed.

The protection of such magnetic media is more difficult than for paper records which can be taken to 100 deg. C before deterioration starts. The corresponding figure for magnetic discs is 65 deg. C, so that Chubb has had to design special protective safes, the latest of which, at a starting price of £610 is aimed at the small business machine market.

If the VDU/keyboard/floppy disc system not exceeding £75,000 in price is taken as the yardstick, one estimate (by Systime) is that there were 12,000 such machines installed in the UK at the end of last year, estimated to rise to 40,000 by the end of 1983.

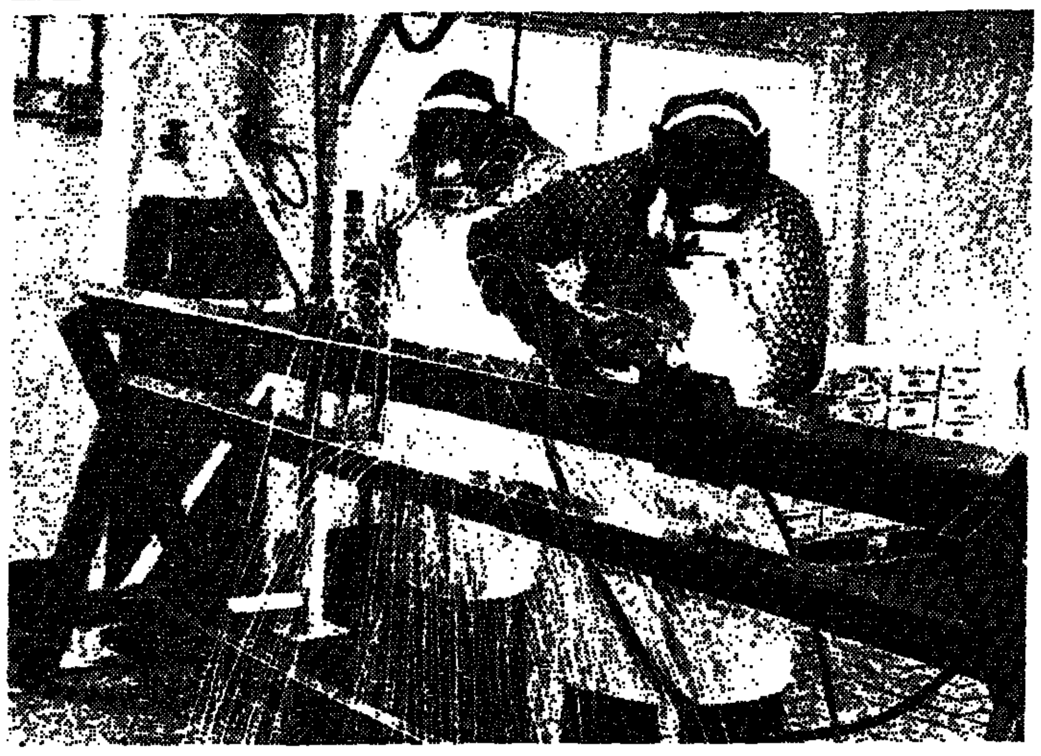
Loss of the discs for these users, with no back-up, might incur several thousands of pounds of cost for the programs and many hours of work in re-constituting the data files, quite apart from any loss of business revenue in the meantime.

Chubb engineers have made use of the original design of the safe for document protection, basically a surround of material with water chemically bonded into it. At high external temperatures the water is driven out and keeps the cabinet at 100 degrees C. Within this surround is another, consisting of about two inches of an organic insulant which ensures that the internal temperature does not exceed 65 degrees C.

The company maintains that even if the safe remains in the ashes of a fire for ten hours or so, the temperature will still not rise above 65 degrees C inside. The unit is also drop tested through 30 feet to stimulate the collapse of an upper floor.

More from Chubb and Son's Lock and Safe Company, Tottenham Street, London W1P 0AA (01-637 2377).

GEOFFREY CHARLISH



About £150,000 has been spent by Metalrax on welding and assembly equipment and on phosphating pretreatment and epoxy polyester powder-coating plant for the production of its new Widespan bolt-free adjustable steel shelving at its Kings Norton, Birmingham works. In this picture inert gas arc welding of connectors and shelf beam sections can be seen

● DATA PROCESSING

Manages the data base

NOW OPERATING in seven U.S. cities as well as nine European countries, Altergo Software, a leading UK company in the business of providing IBM-competitive operating software, has released AROS, a "full function" general purpose data base management system specifically designed for the on-line environment.

Together with the company's existing time sharing, teleprocessing and associated facilities, AROS is said by Altergo to offer a total communications software alternative across the IBM 4300 and 3030 range of computers.

This company claims that there are restraints on existing commercial data base management systems (DBMS) which will not match up to the requirements of the '80s. Many are designed for batch workings, have inadequate security and recovery systems probably designed for a single application instead of a multi-user teleprocessing plus batch environment, and typically are intended for large OS or small DOS users.

Use of AROS, states the company, results in a big reduction of disc input/output and yields a "very fast" response time. Complete security and recovery is built in and there is full compatibility across operating systems, central processor units, disc technologies and so on. Also there are summary and cross reference segments built in to the data base obviating hold-ups due to one I/O (input/output) depending on the result of another with subsequent chaining through the data base.

AROS contains equivalent features to those found in IBM's IMS and DOS/VS DL/1 plus other offerings, but with far lower overheads in memory and processor utilisation and about one-half the disc I/O overhead, according to Altergo. It is claimed that AROS offers an improvement of 2:1 over IBM's information management system (IMS).

An interesting example quoted by Altergo is an ASEA installation in Sweden. This is an eight megabyte IBM 3033 under OS/MVS with 1300 terminals on line accessing a data base spread across 50 3350 disc drives.

Altergo comments: Not only are the response times excellent, but ASEA would not be able to run such a large system under IMS. If a more powerful machine than the 3033 were available from IBM to run the system, a conservative estimate of cost savings from using AROS would be £2m to £3m."

More from the company at 15 Kingsway, London WC2B 6UN (01-836 9075).

Allows machines to talk

ACCORDING TO Toltec Data of Cambridge, a problem can easily arise in organisations in which a number of departments have acquired their own mini or micro computer or terminal: the machines may not readily be able to interchange data.

Now, this company has produced a version of DataRing which in effect acts like a rapid postal service between computers, a system first developed by the Cambridge University Computer Laboratory as a means of interlinking big processors.

It is in fact, a packet data transmission system which is able to achieve speeds of one megabaud—the equivalent of sending the average sized novel of 300 pages in about 1.5 seconds.

Each computer or terminal in the ring is equipped with a communication station in printed board form and a monitor station transmits empty packets 38 bits long, 16 of which are used for data.

If a computer connected to the ring wants to send information, it fills a packet with data as it passes that particular station and adds an address together with its own identification code. As this packet, which is electronically marked "full" moves round the ring it is checked by each station until the contents are identified by the appropriate station, whereupon its contents are read out.

More from the company at 24 Thompson's Lane, Cambridge CB5 8AQ (0223 312347).

Facsimile terminal approved

INTERSCAN has gained PO approval for the Dex 5100, a new group III digital facsimile terminal.

The 5100 is a high performance unit capable of sending an A4 document in 20 seconds. It also has available a number of facilities including downward compatibility an important networking feature which enables the 5100 to talk to all group II terminals automatic document feed, full duplex operation and an auxiliary copying facility.

Interscan, 39, Montrose Ave., Slough, SL1 6BS. 0753 70821.

● BROADCASTING

Radios from Germany

A CONSIDERABLE showing of professional radio equipment is being made by Rhode and Schwarz at the Communications '80 exhibition in Birmingham (April 15 to 18).

High frequency transceiver XK 104 can be used in stationary or mobile mode under difficult environmental conditions. It has a frequency range of 10 kHz to 30 MHz on reception and 1.5 to 30 MHz for transmitting. Nominal continuous wave power output is 400 watts although this can be attenuated. Emission classes are A1, A3, A3J and the unit can be modified for teletypewriter operation on F1 sideband or narrow band.

A new shortwave receiver will be shown, the EK 070. This has high sensitivity, good large signal characteristics, high intermodulation rejection and remote control of all the operating modes. Frequency range is 10 kHz to 30 MHz.

The company is also introducing transmit and receive units for aviation use covering 100 to 162 MHz and 225 to 400 MHz. This is the series 400, the modular structure of which allows easy application to the various requirements in this area.

UK agents are Aveley Electric, Roebuck Road, Chessington, Surrey (01-397 8771).

● ELECTRONICS

Giving a better balance

COMPLEMENTING Mettler's range of fully electronic, analytical balances is the HK160 from the maker's UK agent, Gallenkamp, PO Box 290, Technico House, Christopher Street, London, EC2 (01-247 3211).

This requires no switch weights, has a weighing capacity of 160g and a readability of 0.1 mg.

A single control bar switches the balance on and off, resets to zero, and operates the tare function.

The balance features a new high-speed readout which is said to greatly reduce the risk of overfilling or overloading on a target weight. There is also an automatic calibration facility.

Data output, peripheral instruments—such as printers or computers — can be easily attached to the balance, and correct results are ensured by an adjustment system which eliminates external influences such as draught or vibrations. A stability detector also protects data transfer and further reduces the risk of a wrong result being transferred.

● SAFETY

Refuelling risks cut

ROAD TANKERS carrying both petroleum products and other hazardous liquids can be totally immobilised when fuelling, loading or unloading using a proximity switch system already developed by Thompson Tankers of Bilston for aircraft fuelling equipment. The system also ensures that no spark can be generated.

The company has developed an intrinsically safe magnetically operated proximity switch which incorporates a reed switch embedded in waterproof plastics. The current generated is in the milliamp range so that even if the cable is severed no spark can result. This primary circuit energises a solid state relay positioned forward of the firescreen which immobilises the vehicle.

In the present aircraft applications the proximity switch is located in a "dead man's handle," or at loading points such that all hoses and line nozzles must be disconnected from discharge points and stowed correctly before the vehicle can be driven away. As a final precaution the pumping compartment door must be closed to release the brakes.

More from Great Bridge Road, Bilston, West Midlands WV14 8NP (0902 43141).

● POWER

Longer life switchgear

METAL-ENCLOSED distribution switchgear, incorporating a modular circuit-breaker with vacuum interrupters for controlling electrical power systems up to 36 kilovolts, has been introduced by GEC.

The equipment is the first of its kind in Europe, if not the world. It has all the features of vacuum switchgear in the 11,000 volt category, including reduction of maintenance, simple installation and operation, and long operating life, but applicable to the higher distribution voltage ranges up to 36kV in the UK and overseas.

GEC Distribution Switchgear, Higher Openshaw, Manchester, M11 1FL. 061 370 4000.

LOMBARD

Beware still of Bank advice

BY SAMUEL BRITTAN

THE CASE for a central bank, at arm's length from the government of the day, has been made in different ways. Professor Milton Friedman has often proposed that the U.S. Fed, which is already independent on paper, should be under an obligation to maintain the growth of the money supply within a stated range, to be departed from only in prescribed emergency conditions. Mr. Peter Jay, before he went to Washington, suggested that Parliament should establish an independent Currency Commission, bound by a similar formula, of which the Bank of England would become an executive agency.

Rules

Sir Geoffrey Howe, when Shadow Chancellor, once suggested that the Bank of England should be directly responsible to Parliament via the appropriate Select Committee. He did not elaborate a great deal: but the object of any sensible reform is surely not to give the Bank, whose directors are neither elected by voters nor chosen in the market place, discretion to do what it likes, but to make it subject to rules.

It is noteworthy, however, that the Bank of England has not been pushing for any of these changes. And with good reason from its own point of view. For although such plans might loosen Ministerial reins, they would also reduce Bank of England discretion. The Bank, as at present constituted, has a vested interest in opposing all elements of automaticity or guidelines. It prefers the real if undefined powers it possesses from discretionary action in the financial markets, and from being able to put in a word in high places to any more automatic framework. If we are to have a monetary constitution, the central bank would look very different to today's Bank of England.

Meanwhile there is little in the record of that institution which would make one wish it to have particular influence with the Prime Minister or the Chancellor. In the 1920s, Montagu Norman discredited sound money for two generations by pulling the wool over Churchill's eyes and persuading him to go back to gold at an overvalued parity. In the 1950s and 1960s many people were put off anti-inflationary policies by the sheer badness of arguments put up on their behalf by the Bank. Then in the late 1960s, the Bank used its influence to delay devaluation, thus increasing its pains. Although the prime responsibility for the monetary explosion of the early 1970s was with the Heath Government's "dash for growth," the Bank was all too ready to provide rationalisations for what occurred, together with plenty of errors of its own.

The top levels of the Treasury and Bank must share responsibility for the delay in establishing monetary targets in the middle 1970s and the resulting traumatic negotiations with the IMF. The Treasury dragged its feet more on the idea of the target and the Bank more on the means of implementation. The targets—whose incomplete fulfilment has been a good deal better than nothing — were mainly due to the work of middle-level officials, with occasional encouragement from Mr. Denis Healey himself. In the U.S. a good case can be made for the view that the country had more monetary stability before the establishment of the Fed in 1913 than after.

A study of Bank of England Governors' speeches suggests that the Bank line has for a long time been to favour a mixture of pay controls with some short-term and discretionary monetary guidelines. At a more technical level the Bank of England's archaic method of selling stock, which works by creating crises and giving a free ride to gilt-edged speculators must bear some of the responsibility for recent failures of monetary policy. As for the design of the ill-fated variable interest stock, the less said the better.

Part of the trouble is that the Governor of the Bank of England sees himself not merely as a central banker, but as headmaster of the whole financial system.

Of course Mr. Gordon Richardson has particular experience in these areas, which is all to the good under present arrangements. But what would one not give for someone who was content to be judged in terms of his success in maintaining pre-announced medium-term monetary guidelines — which would be perfectly compatible with a "lender of last resort" function?

The public interest in 'Mickey Mouse'

THERE IS A well-worn canard among practitioners at the Bar that runs something like this: counsel for an appellant in the Court of Appeal opens his case by saying that "this is an appeal against the judgment of Mr. Justice Kekewich . . . but there are other reasons." (Mr. Justice Kekewich, a Chancery judge at the turn of the century, had an unfair reputation for always being wrong.)

If that story is apocryphal, there is no gainsaying that, in the last seven appeals to go to the House of Lords from the Court of Appeal presided over by Lord Denning, the latter's decisions have all been decisively reversed.

Any betting man would, therefore, wager a large sum of money on the reversal on appeal of last week's decision from the Master of the Rolls' court, declaring that a body of taxpayers *represented by the National* Federation of Self-Employed and Small Businesses was entitled to ask the courts whether a tax amnesty granted by the Inland Revenue to casual workers in Fleet Street was a lawful exercise of statutory powers.* But there are other reasons why the decision is palpably wrong.

A year or two ago the BBC screened a programme revealing large-scale evasion of tax liability among about 6,000 men who were casual workers for newspapers. Some of these workers when signing on for work used fictitious names such as Mickey Mouse and Sir Gordon Richards to disguise their true identity. The employers were unaware of the true names; only the trade unions knew that.

The device of payment to anonymous casual workers defeated the claims of the Revenue to tax since it had no right of access to the names from the unions, which were not unnaturally reluctant to volunteer the information. Once the evasion was publicly exposed, the Revenue decided to enforce a system for the revelation of the workers' true names. But it also felt that for the past an amnesty should be granted; otherwise there might be a reaction, and industrial troubles, from which the newspaper industry had recent bitter experience, would ensue.

Some self-employed and small shopkeepers felt outraged by the amnesty. Why, they asked, should these people get away with a fraud on the revenue, when if we did it the full might of the tax inspector would be brought down on us? And so they persuaded their newly-formed association to take up their cudgels by bringing a case in the courts for judicial review.

An application for judicial review of any exercise of statutory power or duty by public authorities may be made with the court's permission, but only if "the applicant has a sufficient interest in the matter to which the application relates." This is almost a re-run of the *Gouriet* case three years ago when a similar organisation, the National Association of Freedom, of which Mr. Gouriet was then secretary, wanted to challenge the right of two post office workers' unions to boycott mail to South Africa.†

Since trade unions are not public authorities, Mr. Gouriet had to seek the leave of the Attorney-General, under what is called a relator action, to bring an action to enforce a public right not to have its mail interefered with. When the Attorney-General declined to give his go-ahead to Mr. Gouriet, the Court of Appeal under Lord Denning held that that was not a complete bar to a citizen coming to the courts.

The House of Lords, however, unanimously and uncompromisingly held that the courts could not question the Attorney-General's right to control access to the courts to enforce public rights; he alone was the protector of public, as opposed to private, rights.

Now Lord Denning has tried to distinguish that ruling of the Law Lords, by saying that *Gouriet's* case was only concerned with relator actions, as indeed it was. But he cites a passage from the judgment of Lord Wilberforce in *Gouriet* that the procedure for judicial review against public authorities is "often applied for by individuals and the courts have allowed them liberal access under a generous conception of *locus standi*." What Lord Denning omitted to observe was that Lord Wilberforce also said it was a fundamental principle of English law that private rights can be asserted by individuals, but that public rights can be asserted only by the Attorney-General as representing the public. In general, no private person has the right of *representing the public* in the assertion of public rights: "If he tries to do so his action can be struck out."

And Lord Wilberforce went on to hold that to allow unrestricted access to individuals seeking enforcement of a public right is contrary to our law.

A private individual cannot sue on behalf of the public for the purpose of preventing public wrongs, though he may do so if he will sustain injury as a result of that wrong. But only then may he come to the courts.

That is why Parliament made a limited exception in the Local Government Act, 1972, in favour of local authorities. A local authority may bring proceedings to enforce a public right if it is considered expedient for the promotion or protection of the interests of the inhabitants. It was under that power that Mr. Justice Woolf last Monday declared that the Secretary of State for Social Services had acted unlawfully in transferring all the functions of the Lambeth, Southwark and Lewisham Area Health Authority (Teaching) to five named commissioners. Doubtless the members of the AHA(T) could have brought an action since they were suspended from office, but no patient in one of the hospitals could have done so, let alone an ordinary citizen of Blackheath or Lewisham.

So why should the body representing self-employed people and small businesses who are *not directly involved* in the newspaper industry have a right to come to the courts about the tax liability of Fleet Street "casuals"?

It is only the absence of any reward for the enforcement of a public duty that marks out the National Federation of Self-employed and Small Businesses from the common informer, the familiar creature who bit the dust in 1951. Financial reward as a means of enlisting the enforcement of the law has always been regarded as objectionable. Such a breed of litigants was described by Jonathan Swift as a "detestable race of people." The absence of any financial reward removes the suggestion of any enlisting of the motive of personal greed to enforce the law.

But is envy of others any more laudable a motive for taking legal action? In the Middle Ages, when the common informer flourished, it was not unknown for proceedings to be brought solely for purposes of revenge without any thought of safeguarding the public interest.

That is why the law insists today that the public interest is to be protected by a minister answerable to Parliament; and that the citizen should look to protecting his individual interests in the courts while public interests are publicly pursued by those appointed to protect them.

Busybodies are not to be encouraged to use the legal *machinery to pursue their vendettas*, other than through the recognised channels of complaint

* *Regina v Inland Revenue Commissioners, ex parte National Federation of Self-Employed and Small Businesses Ltd.* Times Law Report, February 27.

† *Gouriet v Union of Post Office Workers and others* [1978] A.C. 435.

‡ *Regina v Secretary of State for Social Services, ex parte the London Boroughs of Lewisham, Lambeth and Southwark*, Times Law Report, February 25.

THE WEEK IN THE COURTS

BY JUSTINIAN

Defeated Gleason still popular

GLEASON, although failing to maintain an undefeated record over the minor obstacles when being beaten by Jubilee Saint on Saturday, is now vying for favouritism with Torenega in the ante-post market for the Daily Express Triumph Hurdle.

It is difficult to know what to make of the four-year-old's performance in going down by three-quarters of a length to Jubilee Saint in the £8,000 Victor Ludorum Hurdle. On the one hand it can be argued that his narrow failure to give that talented opponent 5 lbs after a long lay off, was a fine effort: on the other, it must be reported that Gleason looked as fit as any in the field, and ready to run the race of his life.

The formbook, too, presents a confusing picture. Ireland's Victor Ludorum representative, Batista, made little show after a number of smart efforts against such as Torenega, This Song For You and Penscynor in his home country; but on a line through Hill Of Slane (twice a runner-up to Gleason) Torenega's claims to favouritism for the March 13 event still stand out. For Batchacre Hall slammed Hill Of Slane and 15 others in the Triumph Hurdle Trial after proving inadequate against Torenega in Ireland.

Torenega has since reconfirmed his status as Ireland's leading novice of his age by giving 8 lbs and an eight lengths beating to Bennaumore in Leopardstown Stillorgan Hurdle.

An already confused Gold Cup picture is becoming more unfathomable as far as backers are concerned, for Silver Buck in no way enhanced his Cheltenham prospects when scrambling home at Hereford after an inept display of jumping over the modest fences there.

Diamond Edge also failed to show anything like the jumping ability necessary to navigate the Gold Cup course at Wincanton recently, and the connections of Border Incident and Approaching must be increasingly optimistic for their charges' win-and-place prospects.

RACING

BY DOMINIC WIGAN

LEICESTER
2.45—Son And Heir
3.15—Shannon Bridge***
3.45—Royal Exile*

WINDSOR
2.00—Concert Hall
3.30—Strathclyde
4.00—Palaestrina**

TV/Radio

BBC 1

† Indicates programme in black and white

6.40-7.55 am Open University (Ultra high frequency only). 9.00 For Schools, Colleges. 11.25 You and Me. 11.40 For Schools, Colleges. 12.45 pm News. 1.00 Pebble Mill at One. 1.45 How Do You Do? 2.01 For Schools, Colleges. 3.15 Songs of Praise. 3.53 Regional News for England (except London). 3.55 Play School. 4.20 Touché Turtle. 4.25 Jackanory. 4.40 Heyyy, It's the King. 5.00 John Craven's Newsround. 5.05 Blue Peter. 5.35 Paddington.
5.40 News.
5.55 Nationwide (London and South East only)
6.20 Nationwide.
6.45 A Question of Sport.
7.15 Blake's Seven.
8.10 Panorama in Rhodesia: After the Elections.
9.00 News.
9.25 The Monday Film: "The Pursuit of Happiness" starring Michael Sarrazin.
10.55 Film 80.
11.25 Education Matters.
11.50 Weather/Regional News.

All Regions as BBC1 except as follows:

Wales—1.45-2.00 pm Pili Pala. 4.40-5.05 Isla and the Farm on the Hill. 5.55-6.20 Wales Today. 6.45-7.15 Heddiw. 9.25 Festival of Welsh Mixed Voices at the Albert Hall, London. 10.00-11.25 Bargen. 11.50 News and Weather for Wales.

Scotland—11.00-11.20 am For Schools. 12.15 pm It's a Great Life. 12.40-12.45 The Scottish News. 5.55-6.20 Reporting Scotland. 11.50 News and Weather for Scotland.

Northern Ireland—3.53-3.55 pm Northern Ireland News. 5.55 Scene Around Six. 6.20-6.45 Land 'N' Larder. 11.50 News and Weather for Northern Ireland.

England—5.55-6.20 pm Look East (Norwich); Look North (Leeds, Manchester, Newcastle); Midlands Today (Birmingham); Points West (Bristol); South Today (Southampton); Spotlight South West (Plymouth).

BBC 2

6.40-7.55 am Open University.
10.05 It Figures.
10.30 The Handicapped Family.
11.00 Play School (as BBC1 3.55 pm).
2.15 pm Let's Go.
2.30 Roads to Conflict.
3.00 That's the Way the Money Goes.
3.30 Delia Smith's Cookery Course.
4.00 Modern Language Teaching.
4.50 Open University.
†5.40 Flash Gordon.
6.00 James Burke's Connections.
6.50 Training dogs the Woodhouse way.
7.15 Mid-Evening News including sub-titles.
7.30 Rock Goes to College.
8.15 Marti Caine.
9.00 Yes Minister.
9.30 Horizon.
10.20 Russian — Language and People.
10.45 Newsnight.
11.30 Arena.

LONDON

9.30 am Schools Programmes. 12.00 We'll Tell You a Story. 12.10 pm Rainbow. 12.30 Numbers at Work. 10.00 News, plus FT Index. 1.20 Thames News. 1.30 About Britain. 2.00 Food, Wine and Friends. †2.30 Monday Matinee: "The Amorous Prawn." 4.15 Clapperboard. 4.45 Jukes of Piccadilly. 5.15 Money-Go-Round.
5.45 News.
6.00 Thames News.
6.35 Crossroads.
7.00 The Kenny Everett Video Show.
7.30 Coronation Street.
8.00 Rushton's Illustrated.
8.30 World in Action.
9.00 The Sandbaggers.
10.00 News.
10.30 Monday Film: "Man at the Top."
12.10 am Close: Rita Tushingham reads poems by Roger McGough.

All IBA Regions as London except at the following times:

ANGLIA

1.25 pm Anglia News. †2.00 Monday Film Matinee: "And Then There Were None" 3.45 *Food, Wine and Friends*. 5.15 University Challenge. 6.00 About Anglia. 10.30 Cross Question. 11.00 The New Avengers. 12.00 A Big Country. 12.30 am Reflection.

ATV

1.20 pm ATV Newsdesk. 2.00 Rendezvous with Romance: "A Nice Girl Like Me" 3.45 Food, Wine and Friends. 5.15 The Television Programme 6.00 ATV Today. 10.30 Left, Right and Centre. 11.00 ATV Newsdesk. 11.05 Barney Miller. 11.35 Divorce and After. 12.05 am Something Different.

BORDER

1.20 pm Border News. 2.30 Monday Matinee: "Sunstruck." 5.15 University Challenge. 6.00 Lookaround Monday. 6.15 Collecting with Curtis. 10.29 Border weather. †10.30 Monday Movietime: "The Pumpkin Eater." 12.25 am Border News Summary.

CHANNEL

1.20 pm Channel Lunchtime News, What's On Where and weather. †2.00 The Monday Matinee: "Great Catherine." 3.45 Food, Wine and Friends. 5.15 University Challenge. 6.00 Channel News. 6.10 Lone Ranger. 10.28 Channel Late News. 10.36 The Pardoe Programme. 11.05 Fantasy Island. 12.00 News and weather in French.

GRAMPIAN

9.25 am First Thing. 1.20 pm North News Headlines. 2.30 Monday Matinee: "The Blue Lagoon" starring Jean Simmons, Donald Houston and Cyril Cusack. 5.15 Wild, Wild World of Animals. 6.00 North Tonight and Area weather forecast. 10.30 Reflections. 10.35 The Monday Movie: "Deliverance." 12.30 am North Late Night Headlines.

GRANADA

1.20 pm Granada Reports. 2.00 Monday Matinee: "It's Good To Be Alive." 3.45 Food, Wine and Friends. 5.10 This Is Your Right. 5.15 Crossroads. 6.00 Granada Reports. 6.30 Selwyn. 10.30 Nuts and Bolts. 11.00 Mystery and Imagination: "Fear in the Night."

HTV

1.20 pm Report West Headlines. 2.00 Here Today. †2.30 The Monday Matinee: "Morgan—A Suitable Case For Treatment." 5.15 Dick Tracy. 5.20 Crossroads. 6.00 Report West. 10.35 Food, Wine and Friends. 11.05 Soap. 11.35 The Mackenzie Affair.

HTV Cymru/Wales—As HTV West/HTV General Service except: 10.05-10.20 am About Wales. 12.00-12.10 pm Trehetiau. 1.20 Penawdau Newyddion y Dydd 1.25-1.30 *Report Wales Headlines* 4.45-5.15 Ser 6.00 Y Dydd. 6.30-7.00 Report Wales. 8.30-9.00 Yr Wythnos.

SCOTTISH

1.20 pm News Headlines and road and weather report. 2.00 Monday Matinee: "Moon Zero Two" 3.45 Food, Wine and Friends. 5.15 Cartoon. 5.20 Crossroads 6.00 Scotland Today. 6.40 Crimedesk 10.30 Moneywise. 11.00 Maude. 11.30 Late Call. 11.35 Have Girls Will Travel.

SOUTHERN

1.20 pm Southern News. 2.00 Food, Wine and Friends. 2.30 "Stolen Hours" starring Susan Hayward 5.15 Dick Tracy Cartoon. 5.20 Crossroads. 6.00 Day by Day. 10.35 Music in Camera. 11.20 Barney Miller. 11.50 Inside Business.

TYNE TEES

9.20 am *The Good Word* followed by North East News Headlines. 1.20 pm North East News and Lookaround. 2.00 Food, Wine and Friends. 2.30 Monday Matinee: "The Blue Lagoon." 5.15 Mork and Mindy. 6.00 North East News Headlines. 6.02 Crossroads. 6.25 Northern Life. 10.30 Northern Report. 11.00 North East News Headlines. 11.05 Monday Movie: "Gone to Ground." 12.30 am Epilogue.

ULSTER

1.20 pm Lunchtime. 2.00 Monday Matinee: "Great Catherine" starring Peter O'Toole, Zero Mostel and Jeanne Moreau. 3.45 Food, Wine and Friends. 4.13 Ulster News Headlines. 5.15 Cartoon Time. 5.20 Crossroads. 6.00 Good Evening Ulster. 10.29 Ulster weather. 10.30 Ballymascanlon 1980. 11.00 The Odd Couple. 11.30 Gardening Today. 11.55 Bedtime.

WESTWARD

1.20 pm Westward News Headlines. 2.00 The Monday Matinee: "Great Catherine" starring Peter O'Toole. 3.42 Gus Honeybun's Birthdays. 3.45 Food, Wine and Friends. 5.15 University Challenge. 6.00 Westward Diary. 10.32 Westward Late News. 10.36 The Pardoe Programme. 11.05 Fantasy Island 12.00 Faith for Life. 12.05 am West Country weather.

YORKSHIRE

1.20 pm Calendar News. 2.00 Monday Matinee: "Great Catherine" starring Peter O'Toole. 3.45 Food, Wine and Friends. 5.15 University Challenge. 6.00 Calendar (Emley Moor and Belmont editions). 10.30 Country Calendar. 11.00 Police Story.

RADIO 1

(S) Stereophonic broadcast
‡Medium wave

5.00 am As Radio 2. 6.00 Dave Lee Travis 9.00 Simon Bates. 11.31 Paul Burnett. 2.00 pm Andy Peebles. 4.31 Kid Jensen. 7.00 Stayin' Alive 8.00 Mike Read 9.50 Newsbeat. 10.00 John Peel (S). 12.0-5.0 am As Radio 2.

RADIO 2

RADIO 3

(S). 2.05 Matinee Musicale (S). 3.05 Music for Organ (S). 3.45 New Records (S). 4.55 News. 5.00 Mainly For Pleasure (S) (‡ and mono only from 6.20). 7.00 Stravinsky (S). 7.30 D. H. Lawrence—50 Years Later. 8.15 Jessye Norman song recital: part 1. Haydn, Brahms (S). 9.15 The Vision of Piers the Ploughman (S). 9.40 Jessye Norman, part 2: Ravel, Strauss (S). 10.25 All the Human Frame Requires. 10.40 Clifford Benson piano

RADIO 4

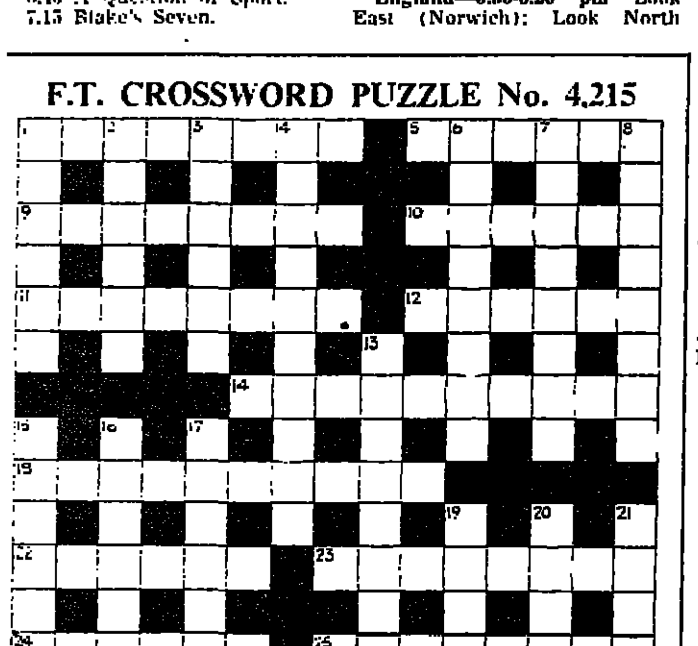
forecast 5.55 Weather; programme news. 6.00 News. 6.30 Frank Muir Goes Into . . . Languages (S). 7.00 News. 7.05 The Archers. 7.20 Science Now. 7.45 The Monday Play (S). 9.00 Three Women Gardeners. 9.30 Kaleidoscope. 9.59 Weather. 10.00 The World Tonight. 10.30 The News Quiz (S). 11.00 A Book at Bedtime. 11.15 The Financial World Tonight. 11.30 Today in Parliament 12.00 News.

BBC Radio London

London Broadcasting

Capital Radio

F.T. CROSSWORD PUZZLE No. 4,215



ACROSS

1 Agreement to get less (8)
5 Essay or article to little sister (6)
9 Diet initially taken subject to excessive control (8)
10 Set free but it's rotten (6)
11 Stranger, not among the favourites (8)
12 Circuitous way some French travel (6)
14 Mark Latin article but it could be rash (10)
18 Arrives holding marriage certificate in elegant style (10)
22 A second-class thoroughfare overseas (6)
23 Inform airman with whimsical following (8)
24 Article returned to Fleet St. district that makes one sick (6)
25 Base rhythm during the interval (8)
26 Excessive fondness for a small spot before time (6)
27 Raise aloft lamp in window (8)

DOWN

1 Package from vehicle going over 100 m.p.h. (6)
2 Deny being born holding gun (6)
3 Stay with soldiers on the sea (6)
4 Vessel on the way down is glowing (10)
6 Junior doctor or poet we hear (8)
7 No cards I shuffled when sneering (8)
8 Team with genuine following of the stars (8)
13 Test the accuracy of transverse restraint (5-5)
15 Send around sleep rock for neck-meat (5-3)
16 Technical soldiers turn up with chap appearing suddenly (8)
17 Making as profit from open space in wood (8)
19 Smoker putting fuel round poles (6)
20 Revolt is in arena (6)
21 Give evidence at trial (6)

The solution to last Saturday's prize puzzle will be published with names of winners next Saturday.

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THE ARTS

Wigmore Hall

Fauré

by DAVID MURRAY

On Friday the Songmakers' Almanac presented a biography-with-songs of Gabriel Fauré. Devised by Graham Johnson, the script was a model of tact and concision, though it may be remarked that the known details of Fauré's life shed singularly little light upon his perfectly self-contained music. In two and a half hours there was room for 25 of his songs too, with four others by his friends and a little piano music. It all made an evening of civilised pleasures, if rarely more than that; there were few sharp insights and the later Fauré remained obstinately out of focus.

The pleasures were many and real—only a long view of Fauré was missing. The great *mélodies* of his last period come in cycles, which does not suit the Almanac formula of four singers taking continual turns; we had to be content with snippets from those cycles, each one diminished out of context. Even the middle-period *Bonne Chanson* was represented just by its concluding song, full of musical back-references that here referred to nothing. Richard Jackson was sensitive but subdued with one of the robust *Horizon chimérique* songs; a stylish account of "Danseuses," from *Mirages*, by Martyn Hill (whose confidence grew as the evening progressed) missed the visionary intimations of its last verse. The opening song of the *Chanson d'Eve* succeeded best, virginally etched by Jennifer Smith. To the unconverted, late Fauré may still have seemed too much of a gentle muchness. Mr. Johnson, accompanist as well as deviser, sounded less assured here: there was too much anxious insistence on first beats, and the exact sense of the elliptical harmonies was often left vague—there are many passages, for example, which can seem to depart from the tonic key and return to it without having been anywhere much, and that was how they seemed.

A sense that not all the threads were firmly in hand probably accounted for some over-emphatic swells from the piano, when the singers were interpretatively diffident. Everyone was more confident with the idiom of the early and middle songs; Sarah Walker made most of her share of them, admirably communicative even in British-edged French. Mr. Jackson and Mr. Hill took longer to warm up, but once out of the shallows of half-voice did persuasive justice to themselves and their music. Hill and Miss Smith were charming in their duets, particularly the lovely "Pleurs d'or."

The songs by Fauré's contemporaries must have been chosen for contrast rather than for analogies — each composer wrote music more like Fauré's than any we were given — but they enriched the programme. Hill was notably perceptive with Saint-Saëns' opium-fantasy "Tournoiement" (Johnson did not meet Saint-Saëns' standard of fleet touch, though) and Ravel's Ronsard auto-elegy. Miss Smith sounded uncharacteristically tight in Duparc's "L'Invitation au voyage"—unfair to ask her to begin cold with that song after spoken narration — but limpid and intense in early Debussy. Johnson had a delectable find in a little piano piece by Charles Koechlin, "Hommage musical à Gabriel Fauré." I wished we could have had Ravel's Berceuse on the master's name, too, but presumably nobody in the Almanac doubles on violin.

Goethe Institute

Herbert Henck

From the snatches we occasionally hear, contemporary German music appears to be thriving if incredibly diversified. Herbert Henck's piano recital on Thursday at the Goethe Institute—given as part of a series aiming to familiarise us with at least one strand of what is currently being done—provided a sympathetic introduction to three luminaries. Henck—effervescent in his (difficulty) spoken introductions and with a prodigious pianism sufficient to compensate for an untuned instrument—chose to present them under the shadow of a fourth: his mighty rendering of Stockhausen's *Klavierstück X* summed up the concert.

Wolfgang Rihm (b. 1952), already a prolific and—at home—important figure, made the strongest impression. His *Klavierstücke* nos. 5 and 6 were played as a pair by Henck, as roughly befitted their respective moods of violent grief (No. 5 is subtitled *Tombeau*) and subdued whimsy (No. 6 is called *Bagatelles*). Romantic and virtuose in style—piano music by both Brahms and Schoenberg is alluded to—the pieces suffer from a rather jejune insistence on over-emphatic note-centres and monodic and unison contrivances; No. 6, moreover, was too long, though variegated. Yet they kept individuality enough for a comparison with Chopin's *Preludes*, likewise turbulent, funereal, pensive—not to seem outrageously fanciful.

Rolf Gehlhaar—the co-ordinator of this concert series—was represented by *Klavierstück 1—1*, sub-titled *Intersection*, a rhetorical, partly graphic work which had little charm. Walter Zimmerman's *Stilletanze* on the other hand exuded it. One small item from his seven- or eight-hour long ecological epic *Lokale Musik* (in progress), it requires the interior of the piano to be thoroughly "prepared" with earth or stone which would ideally come from the composer's own locality, Franconia. Thus damped, the native folk-dance rhythms of the piece and their puckishly altered pitches came over as what must be one of the first live imitations of synthesized sounds.

Herbert Henck is a quite exceptional player, committed to perfectionist interpretations of the music he so passionately supports. What other pianist could not only play Stockhausen's notorious tenth Piece—rife with cluster-glassandi—but do so from memory without a single slip—and also have written a book on the precise subject?

PAUL DRIVER

Once in a Lifetime

The Royal Shakespeare Company's two great commercial successes of last year, *Piaf* and *One in a Lifetime*, are being transferred to the Piccadilly. For *Once in a Lifetime*, which arrived on Friday, there could be no more appropriate theatre. This Hart and Kaufman extravaganza of 1930 deals with the impact on silent Hollywood of the Vitaphone system, the voice of the "talkies." The Piccadilly, then a cinema, was the first in London to show a "talkie," *The Jazz Singer*, in 1928.

Not that *Once in a Lifetime* needs a co-incidence to help it along. Perhaps the skill of Trevor Nunn's bustling direction and the central performance of Richard Griffiths as that stock Hollywood character, the fool taken for a genius, are stronger than Hart and Kaufman's predictable plot but for pace, style and escapism there is little in London to match it.

A.T.

Marcel (Steven Dartnell) far left, and the Glasgow Citizens' company

Glasgow Citizens

A Waste of Time

by MICHAEL COVENEY

The proscenium billows with a huge black curtain contained in a gilded picture frame. The curtain sweeps aside. The ture frame recedes in the shape of four others. A shadowy salon concentrated on the upstage focal point of an actress reciting from Racine's *Phèdre*.

The picture frames provide progressively raised levels. Plush chairs. Lights up on a glittering tableau. Silence. The muffled sound of white gloves applauding. We hear that the Duke is still, at his age, having affairs. Marcel — hunched, worn, drained—pivots away from the scene. Gilberte is in grey. His love for her was a habit, a dream. There is Madame Verdurin, coarse and loud, her hair bunched in a ginger mop. That Vinteuil sonata will give her a headache, she screams. It is played, softly, as Marcel asks a prim little Andrée what exactly it was she used to do with Albertine. And how often.

For one week only the Glasgow Citizens is offering Robert David MacDonald's three-and-a-half hour version of Prousts *A La Recherche du Temps Perdu*. I submit that last sentence as a new definition of *chutzpah*. But they have brought it off magnificently. Not the whole thing, of course, but a distillation of Proustian themes and characters all contained in the dream-like setting of this strange salon, incidents and arguments trapped in a spotlight that then fades into somewhere else. The obsessive, one-sided relationships of Swann and Odette, Marcel and Albertine are cleverly juxtaposed. The first couple embrace passionately at the piano as, downstage, Marcel quizzes Albertine as she dangles provocatively from Louis Quatorze in her underwear. The farewell and reconciliation are played out. Swann wants to know about lesbianism from Odette. She screams at him then swaggers off, gorgeously, adjusting her hair and exposing her neck. Swann tells Marcel he has wasted years of his life.

Mr. MacDonald's approach is to work backwards through all the characters, intercutting just enough non-chronological material to keep us informed. A film version—as Harold Pinter's *Proust Screenplay* (which is still awaiting a production) so brilliantly demonstrates — has the luxury of voice-overs, access to physical Proustian emblems such as hawthorn, steeples, the yellow patch in Vermeer's painting, and the cinematic advantage of establishing mood through silent expression and the cinematic advantage of establishing mood through silent expression and contrasts of tempi. On the stage—and this is the show's chief weakness—it is almost impossible to convey what Marcel is thinking when he's not talking. Steven Dartnell looks up into the gods when he catches the Vinteuil phrase. He sobs loudly when, at the end, we have at last arrived in Combray and mother has no message for Françoise. He stands still as the Marquise of Villeparisis — who incorporates elements of Grandmother and lines of M. de Norpois—interrupts her pervasive impersonation of Queen Victoria painting a picture to tell him that he should strive for balance and judgement and that "a man who doesn't work doesn't count." Marcel's resolution at the end simply does not come across. We are left with a triumphant procession of snapshot scenes; the work of i.e., theatrical artistry, i.e., of the director/designer Philip Prowse, rather than with the life of Marcel.

In many respects the production is another in the Citizen's distinguished line of salon world drama, a line that includes Lermontov's *Maskerade* and Coward's *Semi-Monde*. But I do not think that the company's panache in matters of illusion, multiple setting and sheer unity of purpose has ever been seen to better effect. Mme. de Villeparisis is at the centre of a card school who shift around in each act (there are two intervals), finally coming to symbolise the adult life forbidden to Marcel at Combray. The second act stage is dominated by a painting of a reclining courtesan: the third by an impressionistic view of the Normandy coast—and this is where, of course, Albertine comes springing into focus in a gaggle of girls in white dresses. Realism is eschewed, as usual, but the role of artifice as a creative pressure on the evening is remarkable.

Just as Marcel, in the novel, will digress in the middle of gathering to reflect on a breach of social etiquette or the implications of the Dreyfus affair, so Messrs. MacDonald and Prowse are uninhibited by the demands of narrative consistency, allowing that consistency to emerge eventually. So, it is not until the middle of Act Two that we know the *Phèdre* actress to be, not Berma, but Rachel, when we are treated to a vivid backstage scene, done with a full complement of languorous pierrots, gents in top hats, eye-level lighting and a jangled, dream-like music hall background noise. Within five minutes we are watching the Baron de Charlus track Morel to the brothel, cowering among the potted palms as a line of girls straight out of *Sweet Charity* bump into view and, for that matter, each other. Earlier we have had a strange vision of de Charlus's brothel in the war, with soldiers arriving to the strains of "Pack Up Your Troubles" accompanied by old Jupien at the piano.

At last we have arrived, or rather I have, at the incomparable de Charlus. He, too, has been knocking around since the opening tableau and, in Giles Havergal's somewhat bold and wheedling performance (full of irritating whines and phoney laughter) we are treated to the sight of a lavishly furred slimline de Charlus. No matter: his ascendancy in the salon, here portrayed with typical off-centre bravado as an exercise in distraught camp at the expense of someone (Mme Verdurin) too pretentious and stupid to be worth bothering about, is gradually traced to its street-corner origins.

In the final act we see de Charlus accosting Jupien with talk of cigars, the first hint in the work that people of like sex are attracted to each other. Other social highlights of the novel are done full justice: Swann confides to Marcel in the course of that marvellous comic scene when Oriane, the Duchess, is off to a party in spite of Swann's declaration of impending mortality. The show-off invitation is carried on in a ludicrously large envelope. There is time to change Oriane's red shoes, but not to soak up Swann's news. Again, the rejection scene—second only, in my view, to that of Falstaff by King Hal — is superbly well done. Morel, with his Beethovenish repertoire — quite late on you realise you have been listening to snatches of the late quartets and not, as you might have expected, to bits of Saint-Saens—plays only the piano.

If one of the novel's great strengths is its deflective discussion of anti-semitism in the shadow of Dreyfus, Mr. MacDonald's major contribution is the nailing of salon snobbery in the tones of voice employed by the actors. Di Trevis, quite stunning as Odette, talks as Mme Swann in a voice not dissimilar to that appropriated by our own royals. Mr. Dartnell is neutral throughout, his neutrality highlighted in the dramatic device of having the interrogated Albertine played by both the sexually inquisitive Angela Chadfield and a Cherubino page boy, Rupert Farley. The temporary reconciliation is a sexual compromise *à trois*.

At the end, we see Françoise chasing a chicken, we hear the bell at the garden gate, we see, just about (bad blocking), the fumbled wrestling match between Marcel and Gilberte. Allowing for the Citizens' resources and its status in the British theatre, this evening is a gargantuan achievement. But . . . to sound a controversial note. It could have been brilliant. With, perhaps, Charles Gray as de Charlus, Ian McKellen as Marcel, Beryl Reid as Mme Verdurin . . . Cannot this enterprise and this talent be injected into our mainstream classical tradition? The Citizens has prospered in isolation for ten years. This show will not, I gather, be seen in London. Theatre people in London must carry the can for that disappointment. We have a major company ready to come home. From Glasgow. They must be supported and encouraged to do so. Glasgow's loss would be the national theatre's incontrovertible gain. Now is the hour.

Duke of York's

Rose

by B. A. YOUNG

Andrew Davies's unusual ability shows in this: all the characters in *Rose*, apart from Rose herself, are deliberately drawn as stereotypes; their thought, language and behaviour are lower-bourgeois standards, their appearance uninteresting. Yet their joys and their sufferings, everyday as they are in origin, unimaginative in expression, are piercingly moving. The emotions of the inarticulate are like the emotions of children, they have to be mined for. Mr. Davies has done this and come up with a crock of gold.

Rose is a primary school teacher from a simple family, with a simple husband and, no doubt, simple children, though we hear of these without meeting them. She has what her friends and colleagues would call advanced ideas. She defends homosexuality to the two spinsterish women with whom she shares the staff room at school. She proposes that parents should be allowed to wander round classes. Her friends include a former rock-singer about to get rid of her drunken pop-composer lover.

Glenda Jackson's fine performance has got her exactly, her mouth moving in a cypher of significant moues as she listens patiently to her mother's complaints or her colleague's diatribes. She is almost in danger of joining the dreary gang herself; but besides her advanced ideas she still retains a live spark of romance.

Mr. Davies's first act consists of little more than introducing the characters that surround his heroine. There is her mother (Jean Heywood speaking Scottish dialogue in a Midland accent); the two schoolmistresses (Stephanie Cole and Gillian Martell), Sally (Diana Davies), the singer, and Jake her drinking mate (Richard Vanstone), her husband Geoffrey (David Daker), a dull executive who spends his evenings at meetings but from whose life romance has leaked away. Then there is Jim Beam, the Primary Adviser (Tom Georgeson), who comes one day to the school and fires Rose with desire, or anyway curiosity.

In the second act these lay figures are set to work and their emotions exposed. A play that has till then relied in the sardonic observation of ordinary people glows into a quite new life, and ends in poignant sorrow. Not that the earlier scenes have ever been less than entertaining. There are some delightfully comic moments.

Sufficient props are carried on for each scene, with no permanent set (John Gunter is the ingenious designer). The director is Alan Dossor, who incorporates the stretches of recounted narrative and direct address to the audience so smoothly you accept them as readily as the able acting in the more conventional scenes.

Leonard Burt

Glenda Jackson

Festival Hall

Brahms

by RICHARD JOSEPH

Despite the broad uniformity of style and compositional method found in Brahms's orchestral music, instructive contrasts and juxtapositions can be made. On Friday evening at the Festival Hall Lorin Maazel and the Philharmonia Orchestra played the First Piano Concerto, a work which includes the composer's earliest ideas about a symphony, with the much revised First Symphony itself.

Rudolf Firkusny was the soloist. Respected, but hardly a frequent visitor here. Firkusny seems a transitional figure in the development of contemporary pianism. Though very much a product of the Central European Old School (a pupil of Janacek and Schnabel), his technique is remarkably modern and sophisticated, resembling that of pianists half his age. Nothing in his interpretation of the Brahms was overstressed or effortful; links with the intimate lyricism of Schumann were brought out. Firkusny's right hand is no longer as accurate or powerful as his left, and it draws a slightly less resonant tone from the instrument. But the authority and objectivity of his performance, operating at a patrician level, more than compensated for these problems.

The Philharmonia supported him well, and Maazel's pacing of the first two movements of the Concerto, broad but never purposeless, was excellent. In the First Symphony his urge to overarticulate each structural device, his need to demonstrate an interpretation rather than allow it to speak freely, got the better of him.

There is no doubt that Maazel is one of the few conductors around with the intelligence, acuteness and accuracy needed to produce a completely finished performance within the ever-restricting conditions of London orchestral researsal schedules. Unfortunately, didactism gets in the way. On Friday night the heavy italics of both gesture and interpretation recalled reviews and drawings of the old Von Bülow's Prussian eccentricities. So nothing was done to mend the First Symphony's structural problems, and it emerged as the most distended and pretentious of the composer's works.

St. John's, Smith Square

Weinberg and Remedios

by DAVID MURRAY

Anton Weinberg and Ramon Remedios shared a recital on Saturday, though they performed nothing together. Mr. Weinberg is a splendid clarinettist, and he was dazzling in a Caprice by Mozart's clarinettist friend Anton Stadler. Poulenc's late Sonata, which he delivered with great panache, would have been more striking still with an accompaniment of comparable precision — at the piano Helen Robertson-Barker supplied little more than background.

Weinberg had commissioned a new work from Wilfred Josephs, entitled—with extreme imprudence, surely!—"Piano Piece," with reference to the deliberately low dynamic level of nearly all the music. A piano does participate discreetly in its four movements, but the virtuoso clarinet dominates: long, tastefully modal lines in the first and third, brilliant high-velocity whisperings in the second and fourth. There is just enough imagination displayed to sustain the piece over its modest length, and it suited Mr. Weinberg to a T.

It was good to hear Ramon Remedios' lustily attractive tenor again, even in performances of uncertain style. Much of Schumann's *Dichterliebe* was very slowly and indulgently drawn out, with a resultant disadvantaging of the songs which really are slow, and a sentimentalising of the whole. The marvellous postludes of the tenth, twelfth and last songs were so clumsily played as to cause real distress to any lover of the cycle. Remedios' expressive means are essentially operatic, rather too broad for the good of Schumann's most telling details: but his honest musical instincts were a saving grace, and there were melting moments. The fresh informality of his address to the songs was welcome, though the touches of night-club crooning were not. Later, a group of Gounod songs fared more happily, sung with less poise than easy sincerity. Some thoughtful discipline is need to guide Mr. Remedios into the *Lieder* repertoire, if that is where he wants to go.

1979 BFI Award

The 1979 British Film Institute Award for "the maker of the most original and imaginative film introduced at the National Film Theatre during the past year" goes to the Yilmaz Güney production group for their film *Sürü (The Herd)* which was shown at the 23rd London Film Festival.

The film was directed by Zeki Okten and produced and written by Yilmaz Güney.

The BFI film award committee also highly recommended Derek Jarman's *The Tempest* as an outstanding example of the imagination and originality of the new independent British cinema.

RUGBY UNION BY PETER ROBBINS

After Twickenham, talent suffices

WALES DULY beat Scotland 17—6 before their own prince and on their saint's day. Enjoyable though the match was, there was an odd air of unreality about the whole game. It was as though the atmosphere had been stage managed, a feeling heightened by the evident supremacy of the Welsh.

It was important for Wales as a country and the players as individuals to erase the squalid memory of Twickenham. The players succeeded in this, but perhaps the Scots were not the ideal opponents for the occasion. Nevertheless, Wales demonstrated as they could have done at Twickenham that their players can win matches almost at will if they allow their natural talent to come through.

Wales got off to the best possible start; Fenwick kicked a penalty and Holmes scored a magnificent try after only nine minutes. That cushioning lead was never really threatened, but surprisingly, those were the only scores in the first half.

Both sides lost players before the interval. Laidlaw, Scotland's scrum-half, was replaced by Lawson, and Davies, the Welsh fly-half, by Morgan of Llanelli. Richards moved to fly-half.

Irvine missed a fairly easy penalty in the first-half, and an absolute sitter early in the second half, after which Keen scored an excellent try. The try of the match came last, when Richards jinked over brilliantly, and Blyth converted.

The match had been over as a contest well before that, but Scotland ran bravely from their 22m line and Renwick finished off an exciting counter-attack under the posts for Irvine to convert.

Wales's supremacy began as usual with the forwards. Price gave an outstanding display of tight forward play, enabling Wales to wheel the Scottish at will. Martin and Wheel had a difficult time against Gray and Tomes in the middle of the line-out, and Wales wisely opted to throw long, later using the shortened line-out with Holmes running onto the ball.

Wales put on the pressure for a long period near half time, with the put-in at four successive scrums on the Scottish line. Each time, Butler delayed the ball unnecessarily and Scotland snuffed out the blind-side challenge easily. Surely a quick pass to the open using Blythe as the overlap would have added an element of surprise.

Wales were much more effective in the mauls where, once a forward was held, the rest clustered round him in support. Wheel and Phillips gave visible impetus to the maul in moving the Scots back and Wheel once more showed his strength and expertise at ripping the ball away. Because of this unremitting dominance, Squire and Lane were able either to instigate or to join every attack. Lane showed a remarkable turn of speed, and made a huge contribution to Wales's success.

The empathy between Holmes and Davies was astounding, although Davies did not always kick accurately. It was interesting that when Richards moved to fly half the Welsh attack had much more thrust, which Fenwick and Morgan exploited to the full. Fenwick had an exemplary game, particularly in his forthright tackling of Irvine.

The only question marks hang over the qualities of the two wings. Keen is a good finisher but is less creative than Clive Rees of London Welsh. Elgan Rees gets far too flustered and dropped several passes, one with the line beckoning only 20 yards away.

There were several good individual performances on the Scottish side, notably from Beattie, a most promising No. 8, and Renwick and Johnston in the centre. They reacted quickly to the Welsh threats and to the possibility of counter attack, as did Irvine. But the rest of the Scottish team were sluggish in their reactions. Irvine's failure to kick the three goals was a crippling blow but influenced the outcome less than the margin.

Scotland tried a three-man line-out with little success, so the half-backs were always getting the ball on the retreat. In the circumstances, Gossman did extremely well.

Unfortunately, Biggar and Dickson were so committed to the close work that they were slow to get back and as the game expanded Biggar's lack of pace was clearly exposed.

Scotland's only salvation lay in the counter attack, particularly through Renwick. His partner, young Johnston, did many goodthings and these two could cause problems for England in the Calcutta cup.

What stifled Scotland's attack, besides the retreating posession, was the firm way in which Irvine was tackled out of the game.

SOCCER BY TREVOR BAILEY

The man who bought Kevin Keegan

ALTHOUGH Laurie McMenemy has persuaded the captain of England and the most wanted footballer in Europe to settle for Southampton — the transfer coup of the season—it would be wrong if he is remembered as the man who bought Kevin Keegan, rather than as the man who brought glory and glamour to the Dell.

McMenemy became manager in 1974 when Southampton were eighth from the top of the First Division and well-placed for their highest-ever rating. They might have been described as a civilised, rather unfashionable and well run club, who had never won a major honour and had spent long periods in both the Second and Third Divisions. However, their relegation at the end of his first year was totally unexpected, and a bitter blow to a man who rightly believed he had the ability to succeed in one of the most demanding and insecure of jobs. In the long term, the setback was probably salutary, as it has helped to make him generous in victory and defeat.

Six years later, the Saints have won the FA Cup, fought their way back into the First Division, were losing finalists in the League Cup, and have several good performances in Europe to their credit. McMenemy has dismantled and rebuilt no fewer than four teams — the one he inherited; the one which took the FA Cup, but lacked the consistency needed for promotion; the one which took the club back into the First Division, but had insufficient class to do more than survive; and the present operation.

Changes on this scale require exceptional activity in the market, as well as bringing on local talent. It would constitute an impresssive record, even for a manager entrusted with an open cheque book. But what makes it remarkable is that McMenemy was allowed to spend only what was available from a club which had a crowd capacity of only 24,000 and little hope of extension in the immediate future.

Unlike many football clubs which are heavily in debt through spending vast sums in attempts to buy success, avoid failure, or improve their grounds, Southampton have adhered to the wise financial principle of spending only what they could afford. Their sensible approach can be seen in their last balance sheet, which shows a £142,000 profit.

This is in spite of paying £365,000 in players' wages, and approximately £447,000 on other expenses, excluding transfer fees of about £575,000. It means, of course, that their fund-raising activities, including about £80,000 from advertising, produce more money than the game itself, while it should also be mentioned they recouped £300,000 by selling players.

The club's intention to remain solvent has forced McMenemy to buy realistically and to sell well, which is in many respects more difficult. He has an outstanding record, with far more successes than failures. My favourite example would be David Peach, who was bought cheaply from Gillingham and gave Southampton splendid first-team service. McMenemy also has every reason to be satisfied with the £100,000 profit on the Mick Channon deal. Channon's form on Saturday suggested he is playing better than when he went to Manchester City.

McMenemy's special talent has been to persuade so many name players, nearing the end of their careers, not only to join Southampton but to find fresh zest there. Alan Ball has done a splendid job, both as player and motivator in their promotion drive, while first MacDougall and now Boyer have regularly scored goals.

The latest McMenemy team lies a rather shaky fifth in the table. Judging by their game against West Bromwich, when they were held to a 1—1 draw in spite of having most of the possession and exerting nearly all the pressure, they could have problems qualifying for Europe in time for Keegan's arrival, especially as their away record is untidy. With so much experience, their over-employment of the high ball upfield followed by a charge was disappointing and naive.

Many people have been mystified at Southampton's ability to satisfy Keegan's financial requirements, particularly as he cannot increase home gates much because there is no more room.

My own bet is that this inspired investment will be largely covered by increasing the price of the 16,000 season tickets from £60 for the best seats to about £90. In addition, a club with players of the calibre of Keegan, Watson, Channon demand for pre-season matches on the Continent, and should also substantially increase their share of League away matches.

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Budgeting for a recession

THE FOUR important analyses of the UK economy published today are remarkably close in their prognoses; on present policies, we face a fall of 2 per cent in GDP, with a considerably *sharper fall in manufacturing* output. Unemployment is likely to rise to about 2m, and inflation, though it is likely to ease from midyear, will remain high both in 1980 and 1981. The only possible improvement is in the balance of payments, and even here only one of the forecasting teams, the OECD Secretariat in Paris, expects any really significant change. *From the rest*—the Confederation of British Industry, the National Institute, and the London Business School, which is probably closest to Government thinking, the gloom is almost unrelieved, even in the medium term.

Borrowing

If present policies point to such an outlook, one might think that the policies need changing: but only one of the three reports—naturally, that of the National Institute—suggests *any traditional budgetary "help"* for the economy. The OECD, which offers no Budget advice, nevertheless concludes that the Government has no alternative to pressing on with its present monetary policies, with an appropriate Budget balance. The LBS and the CBI translate this into a broadly neutral Budget, aiming at a public sector borrowing *requirement of £10bn or so*, assuming that the economy develops as forecast.

This advice seems quite likely to be followed, though in the light spending cuts the PSBR target could be even lower. It is a line of policy which may *appear heartless or defeatist*, but it is one which, nevertheless, we would support energetically. This is not simply because fiscal "expansion" might undermine the Government's central monetary policy, but because, assuming that the monetary target is achieved, a fiscal "stimulus" might make things worse not better.

It is as well to be clear first why the immediate prospect is so depressing. This is not because the Government has set a monetary target which is *proving uncomfortably* tight; similar rates of monetary growth permitted quite reasonable expansion in recent years. The trouble is simply that the implications of monetary restraint have been ignored in industry—and to some extent, it *must be added, by the Government* itself. Wage increases in many industries have been grossly excessive, and as the Prime Minister has sharply pointed out, the consequence can only be loss of markets to those on both sides of the bargaining table who have agreed to them, and higher interest rates for everyone.

However, the Chancellor also *paid too little heed to his own* monetary targets in his first Budget, as Ministers now clearly understand. The Government's contribution to the excessive total demand for credit, for the second successive year, has been a powerful cause of a weak *balance of payments—the mirror* image of national borrowing from overseas—as well as of high interest rates.

A sharp rise in interest rates has a number of effects which may well do more to depress the economy that any "stimulus" *which* causes the rise. First, there is a direct transfer of funds from commerce and industry to savers and financial intermediaries. At the current level of debt to the banks, the rise in MLR from 12 to 17 per cent will have reduced industrial *cash flow* by some £1½bn. Second, there is growing evidence that saving does respond to high rates; the rise in the personal savings ratio to 20 per cent in the final quarter of 1979 no doubt helped to start the present recession.

Exchange rates

Finally, *recent market* movements in the dollar as well as sterling show that interest rates can have a powerful effect on exchange rates; and the loss of competitiveness which the OECD puts as high as 40 per cent in three years, is a powerful depressant. It may seem paradoxical to suggest that policies which depress the balance of payments tend to raise the exchange rate, but at least this is consistent with the remarkable strength of sterling during two economically disastrous years.

Of course, a Budget *contains* far more than a single residual called a borrowing requirement —or the more economically significant public sector financial deficit. The implications, say, of cutting spending, raising charges, selling public sector assets, or rationalising the EEC Budget are widely different, though they all have the same *effect on the PSBR*. The perceived fairness of the Budget has important consequences, politically and perhaps economically. But three of the four *reports* issued today answer one vital question. Given the painful difficulty of control*ling the borrowing requirement*, the one mistake the Chancellor is unlikely to make is an excessively tight Budget, however determined he may be to correct the errors of the past two years.

Pretoria under pressure

THE RING is tightening. Rhodesia is well on the way to joining Angola and Mozambique under black majority rule. The expectations of blacks in South Africa are rising, as is the realisation by the authorities *that apartheid must try to move* with the times. But it is one of the potentially pyrrhic successes of apartheid that the races are now so separated that virtually no channels of communications exist between them.

Explosive

The dangers of this situation are highlighted by the findings of the Cillie Commission into the riots which began at the black ghetto of Soweto in 1976, lasted eight months and cost at least 575 lives. The Commission warns that Soweto *is as potentially* explosive now as it was four years ago and blames the entire structure of apartheid as a major factor contributing to this.

It is against the conservative background of the Commission *that one has to see some of its* other striking points—that despite three-quarters of the deaths being caused by police gun fire no policeman was known to be criminally liable; that no senior members of the administration are criticised *even though* clear warnings of trouble existed and alternative methods of riot control could have been tried; and that there were no official responsibilities *for the apparent allowing of* attacks by migrant workers on blacks in Capetown.

But the Commission's acceptance that apartheid itself must *carry much of the blame is* crucial. Worry about the system has long been aired by industrialists who find it economically inefficient. The military too *are worried*, *wishing* to have the domestic front quiet at a time when the external one seems increasingly disturbing.

The record of change is not *good*. *For rural blacks*, there has been some talk of giving more land to the Bantustans, the tribal - based "independent" homelands of which up to 10 are *being established* on the lines of the Transkei. But there is no modification of the basic concept. Now even those who should be expected to support the system are fighting shy.

For urban blacks the Riekert Commission on labour mobility *and Wiehahn Commission* on black labour rights have given an impression of change. But the practical results of their recommendations have been few, with the main novelty being that the government of Mr. P. W. Botha has replaced *a few legal obstructions by* other more subtle ones—a move in line with his general tendency to make administrative rather than political changes. His visit to Soweto and talk of amending the marriage laws received publicity, but achieved little.

At times the 2m Coloureds have struck the 4m white as potential allies against the 20m blacks, but here too the Gov*ernment has found* that attempts to woo the leaders of the Coloureds are failing. The Cillie Commission finds that Coloured of the Western Cape has "*joined the black community* to remove his grievances and gain rights through joint struggle." Mr. Botha thus has few bridges with the blacks on which the build.

Threats

There is an increasing tendency to retreat into the *laager* and to stress the threats posed by the country's Marxist neighbours. In the past there has been talk of creating a "constellation of states" so dependent on Pretoria that they cannot afford to cause it trouble. In Mozambique this dependence is economic but in the last resort it is military force — whether *Pretoria's feared nuclear* capability, its conventional troops, or its actual support for UNITA guerrillas in Angola—which may count. The fundamental *problem of how to tackle the* heartland of *apartheid* has still not been faced by the world. Yet Southern Africa retains its potential for danger. The Cillie Commission says so.

The boundless and rowlinge seas are as common to all people as the ayre, which no prince can prohibite.

Hugo de Groot, known as Grotius, 1583-1645.

Law of the Sea: new regime for oil and oyster

BY DAVID TONGE, DIPLOMATIC CORRESPONDENT

THE LARGEST *act of* dividing up this planet is nearing its end: the sharing out of the world's seabed and oceans is being decided. *In New York today representatives of 150 countries begin a fresh attempt to reach a binding treaty on the subject.*

The negotiations deal with two-thirds of the surface of the earth and involve all its countries, whether coastal or landlocked. They have seen the re-definition of a principle dating back several centuries, that of the freedom of the seas. They will define the rights and duties of every single ship; the powers of countries over shipping lanes as important as the English Channel or the Straits of Hormuz and Malacca; the allocation of territorial *waters and fisheries; and sizes* of continental shelves and margins together with national rights over them.

They will settle ownership over what once was thought to be an Eldorado in the form of nodules of manganese, nickel, *copper and cobalt lying on the* seabed. Estimates of this potential wealth have faded of late. But it has given rise to a "supra-national" enterprise to exploit the seabed on behalf of mankind.

The negotiations are the first *instance of the Third World* successfully demanding to be counted and of a new world order emerging from consensus rather than conflict. They have involved some remarkable alignments—of, say, Afghanistan, Austria, Byelorussia, and Chad *in one group and* the Soviet Union and the U.S. in another.

The principles established over the past few years are already being applied in attempts to *define a further* treaty to cover the Moon and space. Yet to most people the *United Nations Conference* on the Law of the Sea is a closed book.

In its latest form it has been dragging on for six years. Today the omens are better than ever before. Agreement has been reached on *nine-tenths of the issues and* on a timetable to end what has become the world's longest diplomatic marathon. The aim is that after five weeks in New York and a further five, starting on July 28, in Geneva, a draft treaty should be complete: this treaty would then be *signed next year*.

A few countries fear that the present negotiating text of 304 articles and seven annexes, containing a further 102 articles, could finish up in shreds. But the general expectation is that a treaty could be signed, though *in 1982 rather than in 1981*.

The contrast between the scale of the issues involved and the small general awareness of *the negotiations results from* several factors—the inherent complexity of the problems, the suffocating terminology to which Governments and officials have resorted, and the schizophrenia of many of the actors.

Britain, for instance, has to *balance its desire for the maximum* freedom for its shipping with its interest in conserving its beaches and therefore having power over polluters. It also needs to balance the need for secure mineral supplies next century against a desire for *good relations with the Third* World now. Oil companies want the maximum freedom to transport *oil*, but *also* want *the* largest extension possible of national control over the seabed. They prefer to deal with separate governments rather than a seabed authority with a monopoly.

Each Government thus finds *itself horse-trading, and* prefers to avoid the glare of publicity. Britain, for instance, has identical interests with Argentina when it comes to *seeking rights over a wide* continental shelf. But when it comes to control of the new *institutions Britain's interest* lies with the developed North and those of Argentina with the developing South.

Routes and resources

The history of the freedom of navigation on the high seas is a chequered one. On the strength of a paper award in *1494* the Portuguese and Spaniards presumed to divide the world's seas between each other. Queen Elizabeth I of England in 1580 insisted on the freedom of the seas. Grotius, founder of international law, buttressed her arguments. By *the end of the 17th century* the distinction between high seas and territorial waters was *established*. As British naval power grew, it was the Americans who became the champions of the freedom of navigation on the high seas.

Increasingly, interest in the resources of the sea elbowed its way alongside concern over routes on the sea's surface. In the 18th century fishing rights off North America were the subject of bitter conflict between European powers. The *pearl beds off Ceylon, Venezuela* and the Gulf have attracted the covetous for centuries. Then, in *1873*, the first mineral nodules were found and a few years later, from piers, the first offshore oilwell was sunk.

The seabed had also become *a route for submarine cables*. A cable convention was held and later a League of Nations conference dealt with the width of territorial waters. It ended in *disarray on the subject*. *Actual* claims to the seabed were made by Britain and Venezuela in *1942 and the U.S. in 1945*. About this time the Latin American states began to claim up to 200-mile territorial waters. Western anxiety about this contributed *to the staging of two UN conferences* on the Law of the Sea, in 1958 and 1960.

Four UN conventions resulted from the conference of 1958, but these conventions were soon overtaken. There were delays in their ratification, the Soviet Union began to emerge as a world maritime power, technology began far to outstrip the law, and numerous Third World states won their independence, *shifting the balance in the UN* General Assembly.

The concept of the resources of the sea as common property began to gain ground. First put *forward by Roman thinkers* Gaius and Justinian, the concept was endorsed by President Lyndon Johnson in 1966 when he said the U.S. must ensure that "the deep seas and ocean bottoms are, and remain, the legacy of all human beings." *The present formulation of this* idea and the most important concept to be accepted, was put forward one year later by Mr. Arvid Pardo the Maltese Ambassador to the UN who declared the seabed and ocean floor a "common heritage of mankind."

Skirmishing in the UN led to the Third Conference on the Law of the Sea. The first session took place in Caracas in June, 1974. It has since worked by *consensus* rather than using the normal UN voting procedures. A draft negotiating text was prepared in *1977* and revised last year.

Agreement has been reached on navigational issues. Territorial seas should be of 12 miles' width and all ships *should* have the right of "transit passage" through straits. Agreement has been reached on how to protect the seas from pollution and on *rules to cover marine scientific* research and the catching of fish, crustaceans and other living resources.

States which are land-locked *or have short coast lines will* have some rights to surplus fish in the seas of adjoining countries. The special rights of "archipelagic states" (meaning states consisting of groups of islands) are defined, and the concept of exclusive economic *zones has been adopted*. *They* are areas extending 200 miles from the coast within which *states have sovereign rights* over natural resources and economic activities.

Inevitably, what divides the 2,500 delegates at each session attracts more attention than what they have already agreed. The main issues outstanding fall into three main categories: rights to the continental shelf, legal issues, and—*most difficult* —hard minerals.

The problem of the continental shelf and the related issue of oceanic ridges is particularly important to Britain. What is decided will govern what happens to the Western *Approaches west of Cornwall*, which could contain the next generation's oil. The present proposal is that countries without a proper continental shelf should be deemed to have one stretching 200 miles from their coast and that those with exten*sive shelves should be given* rights up to 350 miles from their coasts.

It is also proposed that coastal states should share with others *a proportion of revenues from* oil and other resources found between 200 and 350 miles from the coast.

Britain feels the present text *allows it to achieve its objectives* over the huge Rockall underwater plateau in the Atlantic, even if the Danes and the Irish may be thinking the same. More controversial is the issue of defining ocean ridges in the 200-350 mile area: this has im*plications for the movement of* military ships, the implantation of surveillance devices on the ocean floor and anti-submarine warfare.

There are arguments over how disputes should be settled, especially those concerning delimiting the seabed. There are problems over the final clauses on amending, revising or expressing reservations to the Convention. There is also *the fuss that EEC members are* making about having the EEC as a party to the Convention and the equal fuss that the U.S. is making over not having the Palestine Liberation Organisation as a party.

But the main problems relate to handling the millions of tons of nodules. These are crumbly black minerals like burnt potatoes which lie on the seabed at depths of 10-15,000 feet, *particularly* between Mexico and Hawaii. Hopes have been pinned on them as intense *as* a child's fantasies of pirate treasure. But now expectations are more prosaic.

Spending on research

Though cobalt has increased in value, the most valuable product is expected to be nickel but *forecasts* for demand are not what they used to be in the heady early 1970s. *Secondly, for* seabed mining to be worthwhile, the price of nickel has to rise to levels at which it also begins to become practical to consider mining nickel from the large laterite deposits in Australia, Indonesia, New Caledonia, and *the Philippines*. *Thirdly*, the mining companies have their reservations about the arrangements of the proposed International Seabed Authority and its production wing, the Enterprise.

Ten years ago various consortia were spending heavily on seabed mining research. Now the pace has fallen. "In total all of us invested some $200m, but no one is doing much at present," one consortium says. Yet most countries see the sea*bed regime as the crucial prob*lem. The key issue is whether the U.S. and its allies should *have the power to block* decisions of the Council of the ISA. The developing countries are determined to prevent the emergence of any arrangement similar to that in the UN Security Council where certain individual countries have a *veto. The U.S. says it will* only sign if this issue is satisfactorily resolved.

The Authority is to be a unique body, regulating production and marketing and having an industrial arm, the Enterprise, which will purchase mi*ning and processing technology* from developed states and their mining companies. The industrial states are to contribute financially to it, with Britain's own contribution being several hundred million dollars. A host of detail remains to be finalised *on matters such as the financing* and taxation of mining and the transfer of technology, but the proposals prepared last year by Mr. Tommy Koh of Singapore "have brought us much nearer a solution," according to one EEC country.

The mining companies have little good to say of the Conference on the Law of the Sea. In the U.S. their pressures on the U.S. negotiating team is so intense as to cast doubt *on* the arguments of some mining companies that the economics are *questionable*. *But in* Britain companies express fears that if the conference should now fail a moratorium would be imposed which would deprive consortia of access to the seabed. The oil companies are more content, one saying: "*If it were not for the Law of the Sea, it would be the* law of the jungle."

This sentiment is a part of one of the strongest forces pushing the conference towards success —the general fear that if it collapsed the world would be more uneasy and conflicts more *likely*. *A second factor is* what one participant describes as "the psychological interest in success" of negotiators who have devoted a decade of their life to this single process. And a third is that the package does contain something for every*body*. *Underlying it there are* the first stirrings of a sense of the common interests of mankind to which the Brandt Commission on the survival of the world made reference. It is hard not to conclude that the Law of the Sea is virtually upon us. *Soon there may be little* option but to obey.

THE MAIN SEABED CONSORTIA

TITLE	USUAL NAME	PARTNERS	ACTIVITIES
Kennecott Exploration	Kennecott Group	Kennecott Copper, RTZ, Consolidated Goldfields, BP, Noranda Mines, Mitsubishi	Exploration, collector testing and pilot processing, especially in 1975-7
Ocean Management Incorporated (OMI, OMINC)	INCO Group	International Nickel, Sedco, three W. German and 23 Japanese companies	Continuing exploration, test mining and processing
Ocean Minerals Co. (OMC, OMCO)	Lockheed Group	Lockheed Missiles and Space, Billiton (Royal-Dutch Shell) Standard Oil of Indiana and two others	Exploration in 1978, test mining and processing
Ocean Mining Associates (OMA)	U.S. Steel Group or Deepsea Ventures	U.S. Steel, United Miniere and Sun Co.	Exploration in 1974, test mining and processing

Also active are the French group, of state and private companies, and the Japanese group, Deep Ocean Minerals Association, also of state and private companies.

MEN AND MATTERS

Apocalypse soon warns Wynne

Readers reduced to the verge of despair by the weekend's welter of unhappy economic forecasts should save their tears and brace themselves for worse to come. Wynne Godley, the gloomsters' guru in charge of the Cambridge Department of Applied Economics, is about to bring forth another of his doom-*laden documents on the pro*spects for Britain. At this moment he is saddling up his faithful apocalyptic charger and preparing to descend on the nation bearing tidings, I am told, of "irreversible decline."

While Godley's uncomfortable vision of our future is familiar to students of the economy who have followed the man through *his ten-year tenure* at Cambridge, my informant with an ear to the wall warns that the next set of forecasts—due out after the Budget—is the most blood-curdling he has yet seen. "He has gone through the ozone layer this time," he says.

Godley himself, who foreswore going into "the forecasting business" when he left the Treasury for the realms of academec, was gentlemanly *apologetic, but not to be drawn* into giving me a preview of any of his forthcoming pearls. With an experienced self-publicist's eye on future headlines, he tells me: "I *don't want to scoop* myself."

Dutch treat

Observant readers may have noticed a new sign in the window of the exclusive City tailors George Watson and Son *just* across the road from the Bank of England. It is the Royal Warrant of Prince Bernhardt of the Netherlands (no mean businessman himself), *who has been shopping there* for the past four years or so and is evidently so pleased with the service that he has agreed that his insignia may be displayed— in company, *the super-observant* will note, with that of the King of Afghanistan, whoever he may be.

"It doesn't look so abominable to me"

Absent comrades

Not usually ones to miss an *opportunity* to demonstrate their superiority in international sporting encounters, the Russians are displaying uncharacteristic reticence in *refusing* to allow their leading chess players to come to London next month for a chance of glory (and £10,000 in prizes) in Britain's richest-ever chess *tournament*. Or perhaps ideological fastidiousness has something to do with it: after all, the event is being sponsored from close to the very source of *capitalisim* by stockbrokers Phillips and Drew.

Partner and chess fiend Frank Leonard tells me that the Soviet masters Karpov and Romanishin *gladly accepted* invitations to his firm's Kings Tournament only to be told by their *senior* comrades that they would have to stay at home. No explanations, of course.

"In a way I am jolly glad they are not coming," says Leonard. But not *because* they would probably have taken the lion's share of the booty. "They would have caused terrible *security problems* and had they come we would not have been able to play Viktor Korchnoi. Defector Korchnoi, who is said to be the world's second best player, is still unlikely to have it all his own way. Leonard has lined up a respectable set of *international combatants* including Britain's latest find, 14-year-old Nigel Short.

Missed fortune

All old soldiers eventually fade away, but some take an unconscionably long time about it. *Consider, for example, Field* Marshal Sir William Gomm, whose chestful of medals and regalia comes under the Sotheby hammer on Wednesday. He held a commission in the army for 81 years, starting as a 10-year-old ensign in 1794 *and ending up in the Tower of* London (running the place, I hasten to add) by the time of his death in 1875.

He saw action in most of the *campaigns against Napolean*, during which he appears to have spent much of his time on foot trying to replace the several horses shot from under *him*. *It* was at Waterloo, his great great nephew Richard Carr-Gomm, tells me, that the old campaigner received the Russian Order of St Anne.

The Czar's indulgence is included in the sale, which is expected to raise £25,000 *for the* family finances. The medals, Carr-Gomm says, have been on display in the Army Museum. Now they have to be sold "because we need the money." And he sighs over the fortune that might have been. During a spell in mufti when Sir William was governor of Mauritius, his wife inadvertently put into circulation the Mauritian postage stamp which *has now become a myth in its* own right and accordingly exceedingly valuable. "It must be the most important stamp in the world," laments *Carr-Gomm*. "We keep looking in the family archives for more, but none has turned up yet."

I spy

The flunkey who answers the door at No. 10 on Thursday evening had better keep his wits *about him if Mrs. Thatcher's* "celebration of enterprise" is not to be invaded by pinstriped gate-crashers. The soirée, as I revealed last week, has been laid on to permit the PM to administer a pat on the back and a few gins, no doubt, to the *rising stars* of British *industry* and business.

Since I wrote the said piece I *have received several calls* from stockbrokers keen for obvious reasons to discover the identity of the other 50-odd celebrants. I could only suggest, however, that the inquirers should apply the "door-stepping" techniques popular among journalists.

But *one* entrepreneurial broker offered me a bargain, dubious enough, I feel to be worth recording. "I'll tell you what," my consiparator offered. "*If we were to log all the car* numbers as they arrive, perhaps you could use your journalistic contacts to run them through the police computer and we could trace them like *that*. *It* should be worth about 50p a number, I'd say." Things in the City must be *far* worse than ever I dreamed.

Far fetched

My thanks to David Skinner of Osakaya Securities for his report of a telephone conversation with Kypros Holidays which advertises a villa in Corfu *"350 years* from the beach."

"Do I get a reduction for a long stay?"

"I'm afraid not, sir. How long do you intend to stay?"

"Not sure, it all depends on how many times I go to the beach."

Observer

FINANCIAL TIMES SURVEY

Monday March 3 1980

THE COMPUTER INDUSTRY

Advances in micro-electronic technology and a dramatic fall in hardware costs are bringing computers within reach of an increasing number of users. Computer power is also being used in many new applications, but the competition to supply this expanding market is growing ever more fierce.

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Business applications increase as costs fall

BY GUY DE JONQUIERES

IN A REMARK last year that has been widely quoted since, a senior executive of a U.S. micro-electronics company compared the role of semi-conductor technology in the electronics industry of tomorrow — and by extension in the industrialised economy as a whole —to that played by crude oil today.

It is an appealing comparison, all the more so to an American audience, frustrated and bewildered by the degree of U.S. dependence on foreign oil exporters. For it encompasses not only the pervasive importance of micro-electronics in almost every area of expanding economic activity, but also the strategic power accruing to those who have acquired a significant lead in its development and commercial exploitation.

The analogy is, however, inexact in two ways. For while the supply of oil is finite the supply of silicon chips, whose chief material ingredient is sand, is for all practical purposes limitless. Secondly, while international oil prices have shot up since 1973, the cost of semi-conductors has been falling every year at a very much faster rate.

The decline has been so dramatic that it is worth quoting specifics: the cost, for example, of components needed to provide one megabyte (that is, the equivalent of 1m eight-digit characters) of a computer's main memory. In 1974, it was about $32,000. Three years later it had fallen to $7,000. Now, it is about one third or less of that and, by 1984, it has been confidently predicted, it will fall to around $500.

This steady slide in costs has been largely responsible for a growth of the computer market which has exceeded by far expectations only 10 or 15 years ago. At that time, a computer to most people was a large and cumbersome machine which sat humming in splendid isolation in a glass cubicle, tended solicitously by a reverent staff of technicians.

Such machines still exist, of course, operating under the watchful eye of corporate data-processing departments. But the launching earlier this year by Sinclair of a £100 home computer, coming on the heels of the commercial success of personal micro-computers selling in the £400 to £1,000 range, shows just how far we have come.

Wider acceptance

In between these two extremes, the computer has made great strides in gaining wider acceptance in business. The growth of distributed data-processing, which allows users to execute operations locally and in real time instead of queuing up for access to a remote central computer, has brought computing power right down to the branch office level.

Computers have also been demystified by developments in software, particularly in simplified languages which enable even unskilled staff to operate them. The next logical step will be to make them respond to, and reply in, natural speech; but it will probably be a decade or more before the necessary technology is available for more than very limited applications.

While the market for conventional data-processing has been steadily growing, the computer industry's frontiers are also being progressively pushed outwards to embrace ever larger areas of territory. This expansion is proceeding along two main routes which, as will be seen, ultimately converge.

First, the coming of age of micro-processors means that computer power can now be used liberally in a variety of applications to perform functions which have hitherto been carried out by mechanical or electro-mechanical means.

Increasingly, micro-processors are being incorporated into industrial applications to monitor and control mass production lines, machine tools, mechanical handling and quality control. They are also finding their way into household products, in white goods like washing machines, in heating systems and kitchen appliances, as well as in consumer electronics like hi-fi and television games. In motor cars, they are being used in fuel systems, ignition control and dashboard instrumentation.

Theoretically, the scope for their application is virtually unlimited. Indeed, in the words of Mr. Floyd Kvamme, a senior executive of National Semiconductor: "Any product that uses springs, levers, stepping motors or gears is performing logic and that product should be built out of semiconductors."

It should be added, however, that the switchover to micro-processors involves more than just ripping out one piece of equipment and plugging in another. They are complicated to programme and the considerable expense of doing so can be recouped only over large production volumes: the custom-made micro-processor remains a very costly object.

Moreover, it is rare that it can simply be fitted on to a piece of industrial equipment in place of a mechanical control. Often, the whole machine must be replaced by one of more modern design.

The second path which the computer industry is following leads towards a much closer identification with both telecommunications and office equipment. This "marriage" of different technologies has been celebrated in the U.S. by the coining of the word "compunications" and in France of "telematique." To date, no satisfactory equivalent has been devised in Britain.

The convergence of the two different routes is well-illustrated in the most modern telephone exchanges. These employ large numbers of micro-processors to convert analogue signals into digital pulses and to control switching operations, producing substantial improvements in speed, reliability and traffic handling capacity.

The new generation of exchanges also offer a much wider range of facilities than their electro-mechanical predecessors, such as automatic queuing services, messages and call referral. These functions are not only convenient in themselves but will play an important role in future all-electronic business information and communication systems.

Complex network

Such a system would link together facilities for voice and text communications, word and data-processing, copiers, and electronic data storage in a complex network under the overall supervision of one or more computers. As well as using telephone lines for the transmission of speech and data, it could also use satellites to hook up participants in different centres in a "tele-conference."

Computer technology is vital here, not only because it will provide much of the equipment needed, but also because of the contribution which it can make in devising "interfaces" which will ensure that different machines can communicate with each other in a common language. This latter requirement is already one of the most rapidly expanding areas of the software business.

Admittedly, the market for such large system will probably be confined at first to a relatively small number of very large corporations which are already organised on a widely dispersed global scale. For the smaller concern, both the expense and the changes in administrative and working patterns required to make full use of these facilities may prove a deterrent though they could be introduced bit by bit on a modular basis.

Computer companies are being drawn into this area not only because their technological development points towards it but also by basic commercial considerations. Arthur D. Little, the American consulting company, which takes a somewhat less sanguine view than other observers of the outlook for the computer industry, recently suggested that its future rate of growth would depend significantly on its ability to diversify into hybrid technologies. If that is so, we had soon better find a more felicitous term than "communications" to describe its activities.

HOW MAJOR COMPUTER COMPANIES PERFORMED IN 1979

($m.)

Company	Total revenues	Per cent change on 1978	Net profits	Per cent change on 1978
IBM	22,862	+ 8.5	3,011	− 3.2
Burroughs	2,831	+ 15.1	306	+ 20.6
Control Data	2,300	+ 21	124	+ 39
Honeywell	4,210	+ 18.7	261	+ 29.3
NCR	3,003	+ 15	235	+ 21.1
Sperry Rand	4,586	+ 12.8	259	+ 21
ICL*	1,373	+ 23	75.9	+ 29

* Estimated at exchange rate of £1=$2.20.

Hard lessons for the entrepreneurs

PLUG COMPATIBLE MANUFACTURERS

GUY DE JONQUIERES

ONLY IN the super-heated climate of the computer world could a multi-million dollar industry sprout from a handful of tiny seedlings, flower into exotic profusion and then wilt overnight—all within the space of about five years. And only, perhaps, in the fertile commercial soil of the United States.

That is what happened with a band of adventurous entrepreneurs who found a way of snatching business from under the nose of IBM and then paid the price. Known in the industry jargon as the plug compatible mainframe manufacturers (PCMMs), they specialise in making machines designed to "plug in" to IBM installations.

IBM's customer base, roughly two thirds of all general-purpose mainframe computers installed worldwide, remains a rich source of revenue for the company, even after it has delivered the equipment. Customers need service, maintenance and software support. Moreover, once they have invested heavily in a system they are unlikely to consider lightly switching to another make, with all the expense and upheavals that that would entail.

But IBM's customer base is also a huge market for any rivals able to crack it. The first raids on it were carried out about 15 years ago by companies making peripheral equipment such as disc drives and memory units which were compatible with IBM computers but embodied features not available from IBM itself.

It was not until the early 1970s, however, that anyone seriously thought of going further and competing directly with the mainframe computers to which the peripherals were attached. The man credited with having the idea first was Gene Amdahl, until 1970 director of IBM's Advanced Computing Systems Laboratory.

Greater power

Amdahl left IBM largely because of management's refusal to continue with his project for a very large computer. So he decided to go ahead on his own, setting up Amdahl Corporation with a team of former colleagues from IBM. Thanks partly to a capital injection from Fujitsu of Japan, the company was able to complete the design work and delivered its first computer to an IBM client in 1975. A year later it was sufficiently well established to go public.

Because they had a more modern architecture using more advanced electronic components, Amdahl computers delivered between 1.2 and three times more power than the equivalent IBM machines. Furthermore, they did so at lower cost.

Amdahl's success was too striking not to attract imitators of its own, and within less than three years after its first delivery the ranks of the PCMMs had swollen to about a dozen companies. By early 1979 their combined sales were estimated to be equal to about 5 per cent of IBM mainframe shipments—a remarkably high proportion in such a short period.

At first, IBM struck back rather lazily, cutting the prices of two of its most widely-copied machines by 30 per cent but without changing their technical features. Then it introduced a powerful new model, the 3033, which offered twice as much performance per dollar as the nearest machine in its range. IBM also took to writing more of its computers' instructions in "microcode" wired into the machines, making them harder to copy.

The PCMMs managed to cope with these tactics. But the boldness of IBM's next countermove, just over a year ago, caught them almost entirely by surprise. In effect, it changed the rules of the game by launching a new series of computers, the 4300 range, at drastically reduced prices which made possible price-performance ratios between four and seven times better than anything it had offered previously.

This feat set the computer world alight. Customers flocked in droves to buy the new machines, placing orders worth several billion dollars within the first weeks after the announcement. The PCMMs, previously the darlings of Wall Street, saw their stock prices plummet and their profits with them.

Itel, a fast-growing leasing concern, was forced out of the business altogether and sold its computer activities to National Semiconductor, which is now striving to put them on a stable footing.

But the blow to the PCMM industry, though heavy, was not fatal. It soon became apparent that IBM's daring marketing tactics had stimulated a huge demand which, because of technical and production problems, it was unable to satisfy. A number of new customers, who had delayed acquiring new computers in anticipation of the 4300 launch, were unable to wait any longer: they turned to the PCMMs to fill the gap.

Much more serious was the decision by large numbers of customers fearing further aggressive price cuts and new model launches by IBM to turn to leasing for outright purchases. Because a customer leasing a computer pays the full purchase price only over three years in most cases, manufacturers' revenues suffer badly. Furthermore, many users opted for short-term operating leases running for only two years.

Key factors

The PCMMs have responded to the challenge in different ways. Some met it head on by introducing new small-to-medium sized models which, they claim, match or surpass the price-performance ratio of the 4300 series. Others have thrown in the towel and have withdrawn to areas of the market, such as that for very large computers, where IBM is less competitive. But their ability to survive probably will depend on three main factors:

- In the short term, the speed with which IBM is able to deliver its new machines.
- Whether IBM intends to pursue as radical a shift in price-performance ratios when it next brings new computers to the market, probably during the next year or so. Having itself been somewhat scarred by the aftermath of the 4300 launch, it could choose to tread more softly in the future.
- The size and loyalty of the customer base which the PCMMs have already built up and which will provide revenues from services, maintenance and leases.

The outcome may provide an interesting case study for students of competition theory. The PCMMs showed that IBM's market strength could be defied by a small group of impudent newcomers who, by their challenge, helped prod it into making available cheaper and better equipment to its users.

But IBM's massive response showed that it still has the power to make life very difficult for those who intrude on its market. That is a lesson which is likely to be studied closely by anyone who considers taking on the industry leader head-on in the future.

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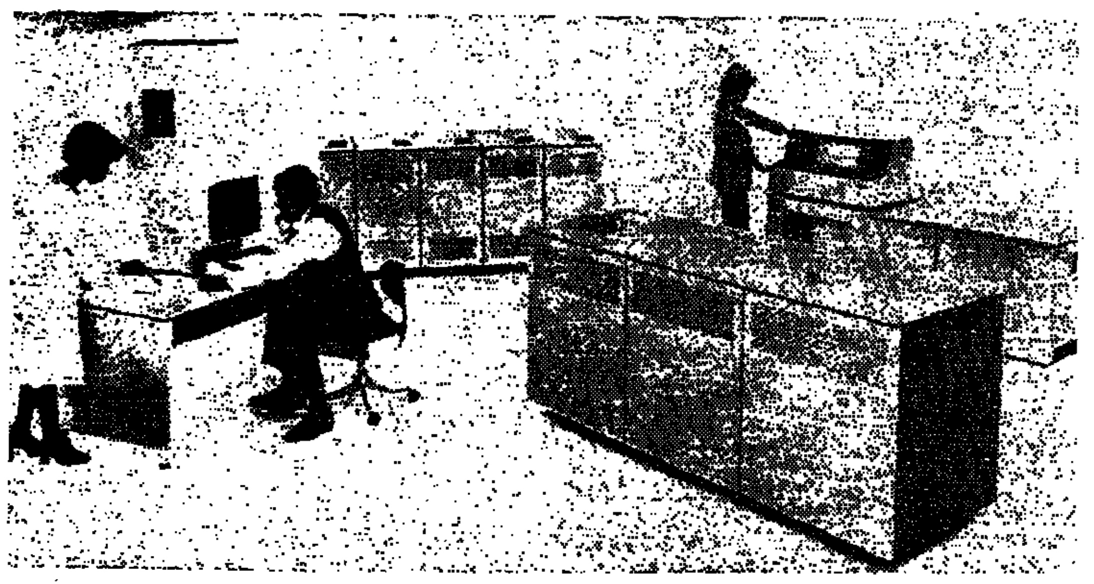
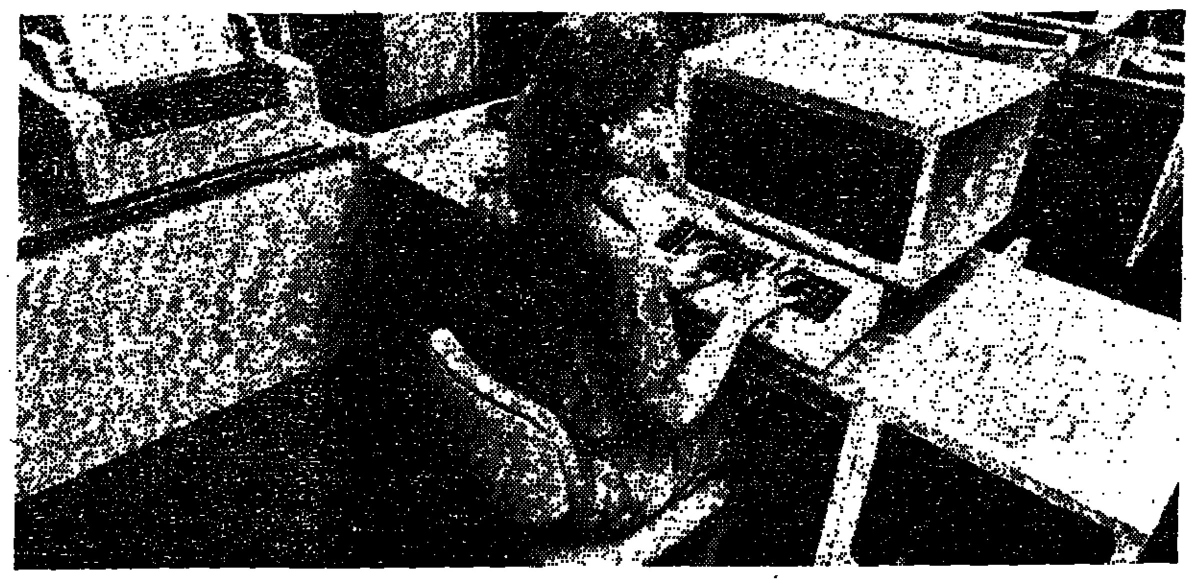




IBM's introduction of aggressively-priced, medium-sized computers, such as the 4341 processor (left) sent shock-waves through the industry last year. More recently, IBM has announced its 5280 distributed data system (centre); an audio-typing unit (right) produces synthetic speech with an unlimited vocabulary when attached to an IBM magnetic media typewriter

Big changes in prices and products

IBM DEVELOPMENTS

GUY DE JONQUIERES

IMB BEGS *superlatives.* With gross revenues running at about $23bn a year and a staff of more than $25.000, it commands resources comparable to those of a small sovereign state.

IBM's research budget, totalling well over $1bn a year, ranks in size with those of some European governments. And despite efforts by both its commercial competitors and the U.S. Justice Department to trim it down to size, it still accounts for a staggering 65 per cent of general-purpose computers installed worldwide.

By virtue of its power and secrecy, the company invites a kind of scrutiny and theorising not dissimilar from that found among Western observers of the Kremlin. Its every move is poured over and analysed for pointers to its future market strategy.

Broadly speaking, IBM-watchers fall into two categories. There are those who maintain that the company is now so big and has so much marketing muscle that it is effectively able to determine the major trends in the international computer industry. They believe that it is only a matter of time before IBM becomes the world standard, to which all other companies must conform—or risk being driven out of business.

On the other hand, there are those who argue that IBM's sheer size had bred a complacency which has dulled its technological edge and commercial instinct. In their view the "great grey giant," as the company is known in the industry, will be unable in the long run to defend itself against multiple attacks by smaller and more agile competitors and will have to surrender increasing segments of its market share.

But IBM's recent behaviour has rudely upset the tidy theories of both schools. Its announcement of two aggressively-priced medium-sized computers, the 4331 and 4341, early last year sent shockwaves through the industry. Embodying the most advanced micro-electronic technology and priced to sell for as little as $65.000 in their simplest form, they offered between four and seven times more power per dollar than the 370-series models they were intended to replace.

Sharp break

The new machines represented the sharpest break yet with IBM's previous tradition of pricing its computers according to the amount of performance which they offered. They were also designed to be simpler to operate, more reliable and easier to service and maintain than existing models.

The immediate impact of the announcement was to sow havoc among IBM's competitors, and particularly among the so-called plug compatible mainframe manufacturers (PCMMs). These companies, most of which were founded in the early 1970s, had carved out a flourishing business by manufacturing computers which ran on the same operating software as IBM mainframes, but which were technically much more modern. Within a few years, PCMM's had captured about 2 per cent of IBM's customer base and were expanding fast.

The 4300 launch forced the PCMMs to slash their prices dramatically to remain competitive and put the survival of several of them in jeopardy. It also caused anxiety among manufacturers of mini-computers who had been steadily encroaching on the medium-sized mainframe market, offering ever more powerful machines. Armed with the 4300, IBM became well-placed to repel their advance.

Before long, however, it was beginning to look as though IBM's bold move might have rebounded. Its customers, while clamouring for the 4300, also took fright. Fearing that its introduction heralded a series of aggressive new model launches which would make obsolete their existing equipment, they moved in large numbers from outright purchases of machines to short-term leases. Their reaction produced a dent in IBM's revenues.

IBM, in the meantime, was having difficulty keeping up with the massive influx of orders for the 4300 series. It soon became apparent that it was unable to produce in sufficient quantities the highly-advanced 64K random access memory (RAM) chips, capable of storing 64,000 bits of information, which it had developed for the machines.

To fill the gap, the company was forced to place orders on the open market for an estimated 18m 16K chips—which it fitted into the machines in groups of four. The cost of this purchase, at a time when chip supplies worldwide were already tight, was about $90m.

The immense development costs and capital expenditures required for the 4300 and other new models in IBM's range also took their toll. In the space of about two years, it moved from a cash surplus of almost $5bn to become a heavy borrower. Last summer, it raised $1.5bn from its banks.

Then, in the autumn, it went to the bond market to raise a further $1bn—its first public debt issue for 12 years. Soon afterwards, it borrowed an additional $300m from lenders in Saudi Arabia.

The year also saw a succession of abrupt shifts in the company's pricing policy. After cutting the prices of products that were either due to be replaced by or directly competed with the 4300 series in February, it raised its leasing and software prices for a number of its machines at the start of July.

This move failed, however, to reverse the customer stampede away from purchases, and the purchase prices of its biggest 303X computers were cut agin in November. Then, at the end of the year, IBM announced its most wide-ranging lease and purchase price increases ever, spanning almost its entire model line. These increases, which initially took effect in the U.S., had sperad to Europe by early this year.

All these upheavals were reflected in the company's financial results. Despite a strengthening of its performance during the final quarter, its profits for the year as a whole were 3.2 per cent down on 1978—the first annual decline recorded since 1951. All in all, to borrow the description of the computer analyst at stockbrokers Wood MacKenzie, 1979 was "a year IBM will want to forget."

Aggressive stance

No doubt IBM, its customers and its competitors are united in hoping that 1980 will prove a somewhat less tumultuous year. But it seems unlikely that it willl be an altogether calm one. IBM's *coup de theatre* with the 4300 launch was almost certainly not an isolated event: the company is widely thought to be moving towards a more aggressive marketing stance and is known to have several interesting new products up its sleeve.

The closest to introduction are the H-series computers. These are expected to be very powerful machines, capable of performing around 10m instructions per second. But it is not yet known whether they will offer as radical an advance in terms of price/performance ratio as did the 4300 series.

There are reasons why the company might opt for a slightly more cautious approach, in the immediate future at least. Not only has the 4300 made IBM customers distinctly nervous about the company's next moves: they have also been complaining for some time about the increasingly bitter competition between different IBM divisions for the same markets, which has led to companies being subjected to raids by warring bands of salesmen.

The source of these complaints can be traced back to 1974-75, when IBM decided to split its production and marketing activities into two. Its main purpose was to improve its penetration of the lower end of the market, where smaller competitors were making deep inroads. Previously, the company had been deterred from putting too much emphasis behind cheaper machines which would attract new customers, for fear that its existing customer base would also decide to trade down.

Under the re-organisation, responsibility for marketing smaller products was entrusted to General Systems Division (GSD), part of the Atlanta-based General Business Group, which also embraced the Office Products Division (OPD). Responsibility for IBM's large mainframe computers, notably the 370, was given to the Data Processing Division (DPD) based in Armonk, New York.

The major battle ground has been the lucrative and fast growing distributed processing market. Here, the two divisions have expounded quite different philosophies: GSD has been singing the virtues of linked small computers, while DPD has emphasised the virtues of networks of terminals grouped around a central "host" processor. While the latter has aimed its sales pitch at corporate data-processing departments, the former has sought business from customers in other parts of the same companies.

Internal rivalry

The growth of the word-processing and office automation markets has fuelled the internal rivalry. Previously, these were served by OPD. But DPD has been reluctant to see business going to a sister organisation of its arch-competitor in Atlanta and has begun offering a number of products of its own in these fields.

Quite separately, IBM has been strengthening its presence in the communications field as a step towards providing a full range of services for the office of the future. It is a 42.5 per cent partner, alongside Consat and Aetna Casualty, in Satellite Business Systems (SBS), which is planning to provide companies with switched line networks for integrated voice, data and image transmission.

SBS is expected to start operations late this year or early next. Initially, the high cost associated with the services it offers—ground stations needed to receive and transmit information will cost about $250,000 each—will limit it to very large corporations. But, in due course, ways may be found to expand the service to smaller customers.

IBM already spans almost the entire range of products that will be required for the office of the future, the only significant exception being facsimile machines. Potentially, its involvement in SBS will give it a commanding position in the rapidly-developing "information industry" based on a marriage between computers and telecommunications.

Still hanging over the company is the U.S. Justice Department's anti-trust case, now entering its 12th year. There seems a good possibility that a ruling will finally emerge during the coming months, though opinion among observers remains divided over whether it is likely to result in the split-up of the company sought by the Federal Government.

Some have speculated recently that the Justice Department may have lowered its sights and would settle for a division of the company into a small number of units—say four or five—instead of the ten or so originally envisaged by the lawyers in Washington. Others maintain that IBM will emerge from the trial intact: certainly, the aggressiveness of the 4300 series launch suggests that the company itself feels that it has less to fear from the Federal trust-busters.

Manufacturers remain fairly confident

THE COMPUTER and electronics industries have shown a remarkable ability to ride out the worst economic storms of the past decade. Basking in the sunshine of rapid technological innovation, the most successful manufacturers have been able to counter both inflation and recession by turning out a stream of products which offered improved performance at steadily lower prices.

Can this resilient growth be sustained in a future that is more than usually clouded by worries about energy supplies, high interest rates, protectionism and rapid political and social change? Most companies in the industry appear to believe that the answer is yes, albeit with some qualifications which will be examined in a moment. They believe that in this and following years the computer and electronics industries should continue to grow at a substantially faster rate than the generally sluggish industrialised economies.

In the U.S., International Data Corporation (IDC) believes that total spending on information processing equipment and services will increase by about 14 per cent, less than a percentage point slower than last year. Moreover, a survey by the American magazine Electronics found that most data-processing manufacturers expect this growth rate to remain in double digits until at least 1983.

Within this overall projection, however, forecasts for individual product lines show widely differing pictures. IDC believes that mainframe computer revenues will rise by only 7 per cent against 16 per cent last year, but it expects growth of more than 20 per cent for word and text-processors, distributed data processing equipment and data communications products.

In Western Europe, where the general economic outlook is arguably even more gloomy than in the U.S., the prospects for the industry are also reasonably good. Electronics magazine forecasts a rise of almost 13 per cent in the market for computers and related equipment to about $16bn.

Smaller computers are expected to perform particularly well, as their steadily falling prices attract increasing numbers of first-time customers into the market. Mini-computer sales are expected to rise by about 23 per cent, and small systems by about 18 per cent. The medium-sized mainframe market is projected to grow by 10 per cent, stimulated by widespread price-cutting in the wake of IBM's introduction of the 4300 series.

Growing demand

Continuing buoyancy at the lower end of the market is also foreseen by Creative Strategies International, a California-based consultancy firm. It believes that the market for small business systems worldwide will grow by more than 30 per cent annually up to 1983, with peripherals like data storage disc drives showing a particularly impressive performance.

Where is the impetus for this projected expansion coming from? Most computer manufacturers ended the year with healthy backlogs of business which in some cases (such as IBM's 4300 series) stretch out two to three years ahead. These order books could, of course, shrink if customers decide to retrench on capital expenditures as business conditions become more difficult.

Many manufacturers maintain, however, that data-processing equipment has now become so inexpensive and can produce such significant productivity gains that a number of companies will choose to economise by shedding office staff and acquiring computers to do their jobs.

How well such forecasts will stand up in the face of the determination by clerical staff unions to limit job losses among their members—especially in the UK—remains to be seen. But it seems inevitable that over the next few years economic realities and the development of new office equipment, in which computers and telecommunications will be equally important, will lead to a steady increase in office automation.

The office is only one of the new markets that is being opened up to electronic technology. As micro-processors, based on tiny silicon chips, become cheaper, smaller and cleverer, applications for them multiply. They are already being built into household appliances, automotive ignition and carburation systems, machine tools, home entertainment, and pocket calculators, to name only a few uses.

In the U.S., purchases of micro-processors by the motor industry are expected to boom this year, despite generally weak car sales. This is because car manufacturers need the devices to meet the stricter mileage and emission control standards which go into effect at the start of the 1981 model year in the autumn. Every 1981-model General Motors car will contain at least two micro-processors.

Another factor tending to offset the impact of cyclical economic trends is expenditure on telecommunications equipment. This is estimated to be running at more than $30bn a year, worldwide, and because projects are planned in advance and take several years to complete they are relatively immune to the general business climate.

The latest telephone exchanges, such as the Post Office's System X, are computer-controlled and rely heavily on electronic components. It is forecast that the world market for such systems will grow to 25m lines by 1990 from about 5m lines today.

PERFORMANCE AND PROSPECTS

GUY DE JONQUIERES

Increased military spending by many Western governments in the wake of the Soviet occupation of Afghanistan will provide an additional powerful underpinning to growth extending well into the next decade, and possibly even beyond.

Ironically, in what is expected to be a recession year for many Western economies, most computer manufacturers are less worried about a weakening of demand for their products than about difficulties in obtaining adequate supplies of electronic components. Since the middle of last year, there has been a steadily worsening shortage of several types of commonly-used semi-conductor on the world market. It has affected particularly severely supplies of 16K random access memory (RAM) chips, which store more than 16,000 bits of information and are an important adjunct to computers' central processors.

Vigorous market

According to some recent estimates, demands for these components in the U.S. will almost double this year over last. The vigour of the market has outstripped the expectations of even the most optimistic semi-conductor manufacturers, most of whom are now adding production capacity as fast as they can. But it will be some months before this works through into easier supplies. Meanwhile, the steady downward trend in component costs is likely to be temporarily reversed.

As well as a high level of overall demand, the tight market reflects supply hiccups. The introduction of a number of more advanced components has been delayed by technical difficulties, and intending customers have switched to 16K RAMs to fill the gap. IBM purchased large quantities of the devices last year for its 4300 series computers after discovering that it was unable to produce in sufficient quantities the very advanced 64K RAMs originally intended for the machines.

Despite these bullish influences, however, the road ahead may not be quite as smooth as it has been during the past decade. One view now being put about in the U.S. is that the growth of sales of small computer systems and specialised business products—both major factors fuelling the industry's recent expansion—could prove a point of weakness in the future.

It is argued that many purchasers of small systems are themselves small companies that are highly sensitive to the impact of recessions. Moreover, as the computer industry tailors its marketing techniques and product lines increasingly to customers' specific needs, it risks becoming more dependent on their economic fortunes.

While these factors may not depress the industry's growth too much over the long term, it could make it more sensitive than in the past to short-term fluctuations in the business cycle.

A more widespread source of concern is the steady rise in costs, particularly among semi-conductor companies. Cheap as silicon chips may be once they are in large-volume production, the expenses involved in design and setting up the necessary manufacturing facilities are becoming immense.

Mr. Fred Bucy, president of Texas Instruments, gave a warning recently that cost pressures will make it increasingly difficult for American companies to maintain their lead in micro-electronics innovation in the years to come. He forecast that just to preserve their current market position they would have to invest between $25bn and $35bn over the next decade, compared with about $4bn over the past 10 years.

Faced with expenditures on this scale, companies are increasingly seeking to consolidate their strength through mergers. The need of U.S. companies to tap fresh sources of capital, combined with the weakness of the dollar and the relatively depressed state of Wall Street, has made the American industry an attractive hunting ground for foreign investors anxious to lay their hands on high technology resources.

Another route to the same end is through state support. This approach was chosen by the National Enterprise Board in Britain when it set up Inmos to develop and manufacture advanced semi-conductor products. Inmos has already received £25m in Government grants and is awaiting official approval of a request for a second £25m tranche.

It remains uncertain, however, whether it will receive the sizeable further amounts which it will most probably need to finance its operations beyond about 1983.

The Japanese Government has also provided considerable support for the development of its national micro-electronics industry, which is now attacking both U.S. and European markets with vigour. Its success has aroused sharp anxiety among American manufacturers, who *have been pressing* their government for investment aids to enable them to remain internationally competitive.

So far, the Federal Government has made no positive response: a recent study by the U.S. International Trade Commission concluded that the Japanese penetration of the American market owed more to superior productivity than to unfair trade tactics. But U.S. semi-conductor manufacturers are continuing to demand a better deal.

While the excess of demand over supply remains as strong as it is now, the world market for electronics products is likely to stay fairly open. But as manufacturing costs soar and international competition becomes still more cut-throat, a growth of demand for some form of trade protection from those who have failed to stay in the forefront of the industry cannot be ruled out.

Systems suit a wide range of operations

PROCESS CONTROL

GEOFFREY OWEN

FROM THE early 1960s, process control computers began to be applied to continuous and semi-continuous process industries, such as oil refining, petrochemicals, pulp and paper, steel and food processing. It was widely thought that conventional control instruments would soon be largely displaced by what was called direct digital control, in which the computer would carry out the necessary calculations and send instructions directly to the instruments located around the plant.

In practice, the application of process control computers proved to be slower than the optimists had expected, partly because the computers themselves were too expensive and too unreliable. The programming of computers to control industrial processes was more complex and more time-consuming than in conventional data processing.

Finally, the effectiveness of process computer systems was heavily dependent on the accuracy of the instruments used to measure and analyse what was going on inside the plant.

In all these areas there have been striking improvements during the last few years, but no advance has been more important to process control than the introduction of the microprocessor. It has reduced *the cost of process control* systems and increased their flexibility and reliability.

While there will always be a demand for conventional pneumatic and analogue control instruments, the switch to digital instruments and systems is gathering pace. Process control computers are no longer confined to large, complex operations like an ethylene plant or an oil refinery, but can be extended economically to a wide range of smaller-scale process operations.

Moreover, the gains in efficiency (including energy sayings) which are made possible by the newer, microprocessor-based control systems is encouraging a trend towards "retrofitting" these systems on older manufacturing plants.

Competing for this large and growing market are computer manufacturers, instrument-makers and a number of software houses which design their own systems and buy in hardware to suit each application. It is knowledge about industrial processes rather than knowledge about computers which is the key to success. Thus, in the case of Honeywell, one of the leaders, the supply of industrial control systems is a distinct activity from information systems and stems more from the company's traditional strength in control instrumentation than from its know-how in computers.

Breakthrough

It was Honeywell which, in 1975, achieved an important breakthrough in distributed systems with the introduction of the TDC 2000. The company describes it as "the first process control architecture to integrate microprocessor-based controllers, video-based operator stations and process control computers into a single system, linked by a low-cost data-hiway."

The key to this system is the use of the microprocessor to replace the conventional array of analogue controllers, recorders and other instruments with an integrated system.

The TDC 2000 is now manufactured in the UK as well as in the U.S. One of the biggest European orders placed last year was for three systems, valued at £1.6m, to control a catalytic cracking unit at a refinery in South Wales.

Honeywell's two U.S.-owned rivals, Foxboro and Taylor, have introduced similar systems —the Foxboro Spectrum and the Taylor Mod III. Both these companies are major instrument manufacturers and they produce a wide range of pneumatic and analogue controllers as well as digital controls and systems.

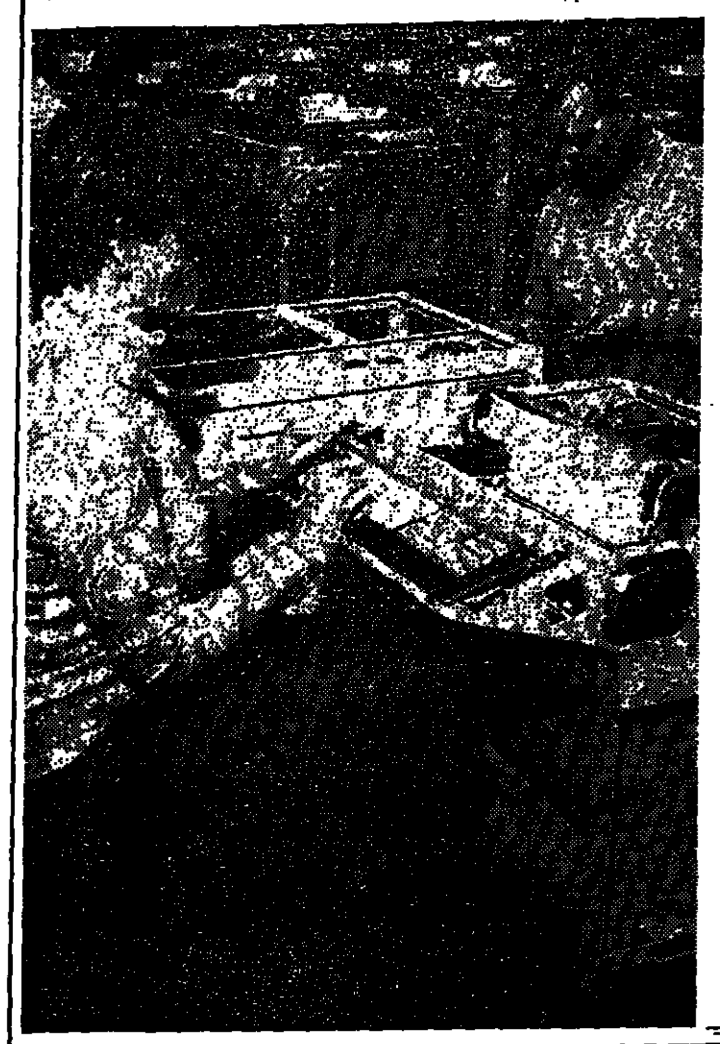
Similarly, Kent, the British instrument company which is partly owned by Brown Boveri of Switzerland, has introduced its Kent P4000 integrated control system which competes against the TDC 2000 in many applications.

Another important UK-based contender is GEC Industrial Controls, whose GEM 80 system, introduced last May, has had considerable success. One of the biggest orders was for the control system in a new steel mill in Yugoslavia, for which Davy is the main contractor; the GEC part of the order includes 30 GEM 80 controllers.

One of the pioneers in process control has been Ferranti, whose Argus computers are widely used in steel, chemicals, power generation and other applications. Another strong UK-based concern is Babcock-Bristol which brings together Babcock Controls with the Bristol division, formerly part of American Chain and Cable.

An interesting development of small microprocessor-based controllers for batch production is the Negretti and Zambra MPC 80. This is an old-*established British instrument* company whose entry into digital systems was facilitated by co-operation with the Department of Industry's Warren Spring Laboratory and with the British Sugar Corporation. The MPC 80 is a building block which can be used to control a single group of machines or can be built up into a complete system for controlling an entire plant.

A variety of other equipment is on the market ranging from programmable logic controllers (such as the ITT Director) to single and multi-loop controllers (like the Honeywell DCP 7700) and to full process control systems. Thus, the systems designer has a range of devices available to him from which he can select the configuration best suited to his needs.



Computers are exported to more than 100 countries from NCR's manufacturing plant in Dundee, where work proceeds (above) on a self-service auto-teller terminal, the NCR 1780, which was also designed in Scotland. NCR worldwide employs more than 62,000 people.

Left: Production of Burrough's new range of small computers, the B.90 series, has begun at the group's Cumbernauld plant in Scotland. Burroughs reported new records for earnings and orders, worldwide, during 1979. Net earnings for the year were $305.5m, an increase of 21 per cent over 1978.

Astonishing advances in new technology

PROGRESS IN THE U.S.

STEWART FLEMING

SCIENCE FICTION'S vision of a world dominated by humanoids, more clever than their creators, may have appeared to be coming a step closer last November when Texas Instruments announced that it could now offer a speech synthesis system which can be built into machines to enable them to talk to people.

The company's breakthrough has come, in part, because of further advances in microelectronics which have allowed it to cram on to one computer chip all the functions necessary for a micro-computer-controlled system which can reproduce human speech.

The pace of technological advance in the microelectronics and data-processing industry, which has produced a long-term yearly decline in the cost of computer hardware equipment, averaging between 15 and 20 per cent, has been a prime factor in the astonishing growth of the industry. It has offered business improved productivity and management techniques, at a stable cost, at a time when labour is becoming more expensive and corporations more complex.

As the Texas Instruments advance suggests, the pace of technical change is not slowing. Whatever the more exotic implications of this may be, what is already apparent is that this rapid innovation is already changing the structure of industry in unexpected ways—and perhaps nowhere in the world is this more evident than in the United States.

The past year has seen a succession of developments in the U.S. pointing in this direction—some, like the giant oil company, Exxon's $1bn bid for an electric motor manufacturer, Reliance Electronic, outside the data-processing industry. (It was partly an Exxon advance in microelectronics which led the company into this diversification.)

Data processing

But many of the changes taking place—in part, spurred by technical advance—are directly related to data-processing and computerisation, including, for example, the accelerating pace at which the telecommunications and data-processing industries, are converging not only in the use of common technology, but also in the way corporations in one of these businesses are expanding into each other's territory.

What is happening is that major companies are gearing-up for what they expect to be a multi-billion dollar market, providing equipment and services for what has been termed "the office of the future."

In fact, the office of the future is already partly here, but in the next few years its presence will become more obvious and will have a clearer impact on the earnings of companies supplying it.

Major companies are gearing up to link their widely-dispersed offices to high-speed digital communications systems, In some cases using satellites and earth stations, which will transmit information, not just between telephones and computers, but also between copying machines, video equipment and word processing machines in different locations, developments which, for example, are expected to reduce the volume of inter-company mail sent through the traditional post office systems.

The copying machine manufacturer, Xerox Corporation's $203m acquisition of the communications company, Western Union International; and General Telephone and Electronics' $55m acquisition of Telenet were just two examples of takeovers last year, which were motivated by efforts to prepare for the office of the future market.

Apart from the longer term adjustments in the structure of the computer and telecommunications industries within, what has traditionally been seen as the computer industry itself, there have been dramatic changes.

Perhaps the most significant was the emergence of a more aggressive and competitive International Business Machines, the company which has dominated the computer industry, but which has often been viewed as conservative in its application of new technology to its products and in its pricing—mainly because of the need to protect its existing customers from too rapid change.

Last year, however, in the face of mounting competition IBM responded by introducing a new medium-sized computer, the 4,300 series aggressively-priced and incorporating more advanced technology than many rivals had expected. The move shocked the "plug compatible" manufacturers who were undercutting IBM by selling hardware which ran on IBM software (see pages II and III of this survey).

By the end of the year, ITEL had virtually withdrawn from the computer industry after reporting losses of $226m in the first nine months of its financial year. Amdahl's which had been the *wunderkind* of the industry, also reported a profits collapse.

Ironically, IBM itself did not emerge unscathed from its changing policies, for the first time since 1951 Wall Street's favourite growth stock reported a decline in earnings in 1979, albeit a slight one, with profits dropping from $3.1bn to $3bn.

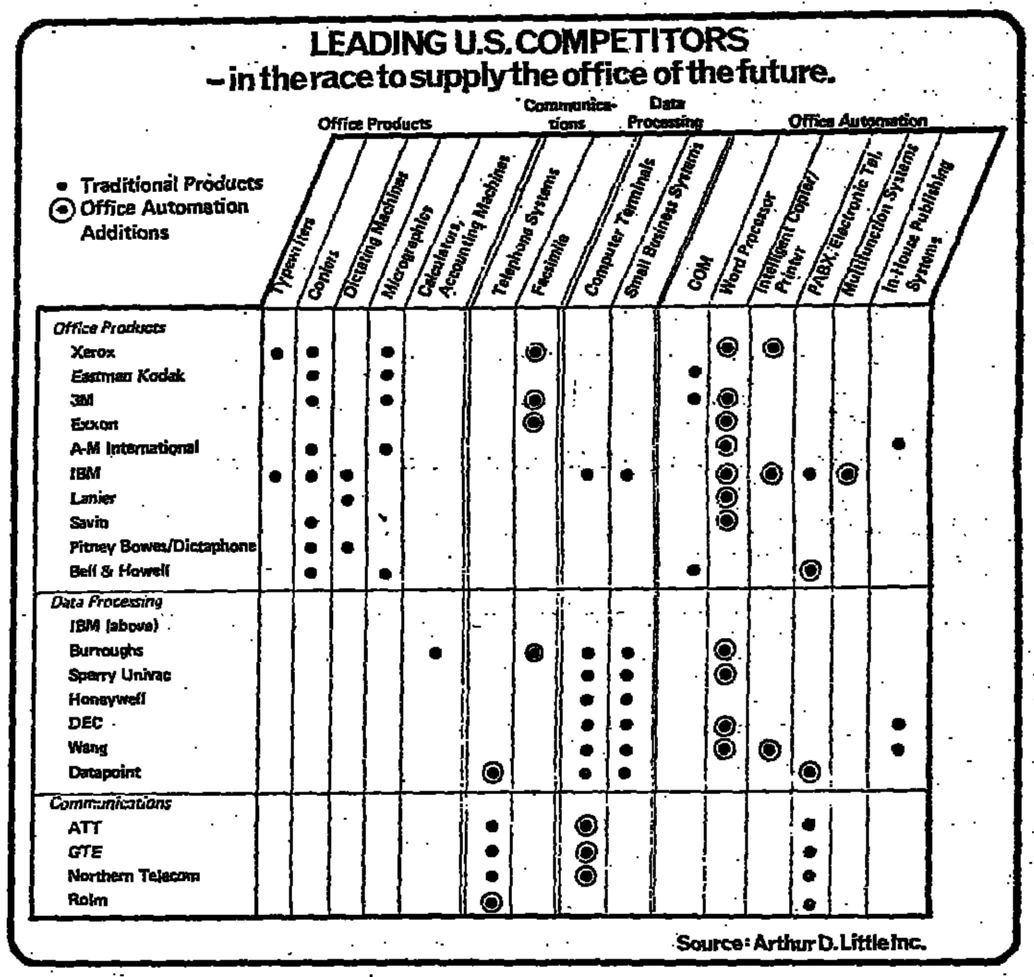
For most of the other major mainframe computer companies, however, the further heavy demand for equipment last year produced another strong year's profit gain.

Honeywell's earnings were up 29 per cent at dollars $260.5m, Burrough's 20 per cent at $305.5m. Sperry Corporation, after nine months, recorded a 23 per cent gain at $189.6m, and Control Data was up 38.7 per cent at $124.2m.

As they look ahead into this year, share analysts are anticipating a significant slowing of profits growth, despite the industry's strong order backlog.

In previous periods of sluggish business activity, the computer companies have generally managed to come through without serious earnings declines—indeed, in the 1974-75 recession, the steepest in the post-war period, earnings advanced around 10 per cent in each year.

In spite of the uncertain economic outlook, Wall Street analysts are still projecting gains for 1980, but in the 10-15 per cent range. They point out that the major companies are believed to be operating with low inventories and have plans ready to cut back production quickly, if market conditions should deteriorate more than expected.



EEC hopes to boost innovation

EUROPEAN DEVELOPMENTS

JOHN LLOYD

THE MANUFACTURE *and use of computers in Europe is a politically touchy business. In simple terms, it is so because European countries—individually and collectively, at the level of the European Commission—feel they do not make* sufficient computers and that they do not use *enough of them.*

The main "bogey" is, of course, IBM, the U.S. multinational—the tenth largest company in the world in terms of *sales and third in profits,* as well as being the world's largest electronics *company, by any* measure, and possessing a customer base of 60 per cent of world market, (50-60 per cent in Europe). That has to be a *problem for European companies* which seek to grow, and European Governments which hope to encourage them to expand.

The problem is further compounded by three other factors; first, the second-string computer companies — Burroughs, Honeywell, NCR, Sperry Univac and *DEC*—are *all* American, too, bringing the U.S. share of the European market to around 80 per cent.

Second, the most aggressive marketers of computers are now the Japanese, who identified the sector as a crucial one over a decade ago, and whose research and development is *now bearing fruit.*

Thus, the attempts to increase European market-share run up against an enormously powerful established force and a fast-growing contender—while also being complicated by the third *factor,* which is that *there are* so *few* signs of collaboration between European computer makers. *All* of them are at least as keen to "steal a march on each *other," as to collectively claw* back ground from the U.S. or beat off the Japanese.

To describe what response there is, and indeed to give the *outlines* of the *industry itself,* it is necessary to look to three levels of activity—the EEC, *national Governments and the* companies. The state has *always* been heavily involved in computers, mainly because of the large funds it requires (and the high risk attached to the business, which deters the banks), and also because a computer industry is seen as a *strategic necessity by most* advanced economies.

● The EEC has recently published a report, "European society faced with the challenge of new information technologies." This attempts *to draw guidelines* on how *the* member-states might better pool their *data* processing resources.

Stressing the central importance of information technologies to advanced economies, the *Commission committed itself to* establish a social policy to aid technological innovation and to attempt to create a homogeneous market in Europe *for telecommunication services.* The Commission also seeks to promote investment in the industry by the private sector and stimulate exports, encourage *joint developments between* European companies and enhance the Commission's own data bases and advanced communications systems.

Data network

Some *of these initiatives* are already under way: the Euronet service, *for* example, sponsored by the EEC, is a data network which might form the basis of a public. European-wide data communications system.

But, as the Commission's document fully admits, there is a long way to go: "Europe has not succeeded in creating the common market of ideas or the *mobility of talent that* exists *in* the U.S.; the different national aid programmes have fostered competing national enterprises, while leaving key long-term *needs* unmet.

"Europe has neither the continental market *of America nor* the common strategy of Japan, while the great social debate has so far been confined to national bounds."

It is to these national bounds *that we now turn.* All major European national Governments have taken a direct and continuing interest in their major computer manufacturers. Both the British and French Governments played key roles in the creation of their lead companies, the Italian Government has earmarked £500m for the computer/communications sector; while even the Germans; much the least interventionist in this regard, have helped Siemens with R and D support and, like *all* other states (though less so) tend to buy German computers.

Because of the large sums spent by various states on their computer *industries,* because of that industry's criticial role in technological modernisation and in defence and because of that less definable commodity, *national* prestige, each state is largely committed to its "own" manufacturer and to its strategies. In each case, the state and its agencies are major purchasers—often *the* major purchaser. Thus, they have created a mutually dependent relationship—the company depends on the state for support and, from time to time, for funds, while the state depends on the company *to cater for its data* processing needs.

This relationship, however, is now under threat, as the EEC moves to enforce the measures agreed at *the Tokyo Round of* the General Agreement of Tariffs and Trade. For the computer industry, the important measure is that preferential *purchasing by states must be* liberalised, and that purchases of computers, in theory at least, will be open to anyone in the market *from the end of this* year.

The move has *worried the* European companies, who see U.S. and Japanese competition ready to snap up their hitherto protected preserves.

A variety of measures are being discussed to ward off the *worst* effects of the change: one of the more interesting has been canvassed by Britain's ICL, which has suggested a European-wide purchasing policy. As outlined by Dr. Christopher Wilson, ICL's managing director, the scheme would involve the concept of "second preference"—that is, where the Government of any European country did not wish to purchase from its "own" supplier, *it should turn as a second* choice to another *European manufacturer, rather than to* one from an overseas country.

So far, the concept remains just that: but *it* is clear that the risks of substantial loss of business *are high, and thus the* incentive to agree a scheme which might offer some protection, but not run foul of the GATT requirements, is high.

None of this, however, should be taken to mean that the major European companies are facing serious market problems. Difficulties they do have, but all are *growing and all are sharing in* the continuing boom in demand for more information, and better and faster communication of it.

● *In West Germany, the major* company in the computer field is the electronics giant, Siemens, though Nixdorf is showing success in smaller machines.

Siemen's *computer division* has only recently come out of some years of loss: it has had very strong competition in its home market from IBM—whose major European plants are in West Germany—and has lacked *a full range in medium and* large machines.

Two moves have *bettered its* position: first, and most importantly, it has linked with the Japanese company Fujitsu — Siemens will market Fujitsu's large machines while Fujitsu will market in Japan, Siemens peripheral equipment. Like Siemens' own range, Fujitsu machines are IBM-compatible.

New technology

Second, Siemens has greatly increased its spending on microelectronics and related technologies, creating a high-level *overseeing committee concerned* to ensure that the new technology pervades all of the company's operations. This means that the data processing division has access to a large and growing research and development division, an element which does not ensure success but is one of its preconditions.

● **In France,** the major company is a Franco-American venture, Cii Honeywell-Bull, where much of the initial technology was supplied by the U.S. *company Honeywell.* The company, which was created by State leverage, has been strongly supported since by the Government, though it has been *relatively successful* in attracting private and some export business, too.

While the link to Honeywell, one of the largest of the second-*rank (after IBM) U.S. companies,* has been of benefit technically, the *familiar* problems of joint ventures in the marketing area continue to dog *the company. There are* persistent rumours that the UK and Italian operations of Honeywell are to be merged with Cii, though, so far, no concrete action *has* been *taken.*

● *In Italy, the domestic company,* Olivetti, is the weakest of the native Europeans: the Italian market is strongly dominated by IBM and Hisi-Honeywell.

However, Olivetti has *recently concluded a major deal* with Hitachi of Japan, closely paralleling that struck between Siemens and Fujitsu, under which the Japanese company will supply its medium and large machines to the Italian *one.*

The *significance* of the deal goes beyond the potential it holds for Olivetti. Like Siemens/Fujitsu, Olivetti-Hitachi are IBM-compatible—indeed, the Hitachi and Fujitsu *machines were jointly* developed under the Japanese Government-sponsored programme of co-operation for computer research. Thus, Europe now has *two Euro-Japanese ventures,* closely similar in technology (at least at the high end) which are IBM-compatible. *Will that* give them a large advantage, and is *it a pointer to future* developments?

● **In the UK,** International Computers (ICL) thinks not. It has developed its own technology, *and in the 2900 range,* claims to have the most modern architecture in the world. Since its acquisition of Singer Business Machines in 1976, ICL has *been strong in small machines:* it has always had considerable medium and large mainframe capacity.

It has been a considerable *technical innovator, and has* been the most successful of European companies in the export field. Its problems, which are well-rehearsed are—like *everyone else—IBM; a domestic* market which may go into a deeper recession than most; a need to secure customer acceptability of new technology and—as we *have seen—worries over* its "protected" market. Yet, the company has performed well in the past, and most observers believe it will continue to do so.

The emphasis is on joint ventures

JAPANESE COMPANIES

RICHARD HANSON

ONE OF the Japanese dreams which didn't come true during the heady days of rapid economic growth in the 1960s and early 1970s was the creation of *a computer industry giant* to equal the Americans at home and overseas. The Japanese companies which rose to the challenge did manage to capture the lion's share of the home market away from IBM (though IBM is still the largest single computer company in Japan), but they have found the vital road to expansion overseas long and hard.

The computer *industry* in Japan began in the 1950s, roughly ten years behind the emergence of IBM as the leading computer company in the world. The experts at the Ministry of International Trade and Industry (MITI) quite wisely recognised that computers would play a vital role in the future economy. More importantly, they realised that *developing a domestic computer* industry was well beyond the capabilities, at that time, of the private sector alone.

Thus began a Government-relationship with *the* computer industry which is perhaps *stronger* than that with any other industry in Japan, MITI encouraged the import of foreign computer technology (in return for which foreign companies, *such as IBM,* were allowed to enter) and limits on imports.

Government aid came in the form of encouraging research and development, regrouping the companies involved in computers so that developments might be shared. It also provided subsidies initially to develop main machines and peripheral equipment to rival *IBM and now to advance* in the field of VLSIs and computer software.

The Government's original goal was to foster companies which could join together in competition with IBM (initially, *three groups of two companies* each were designated). But the competitive spirit among the Japanese companies themselves proved too strong to allow for any actual mergers.

Six companies

There were six Japanese companies involved to some degree in large-scale computers. These are Fujitsu (*the industry* leader, with about 19 per cent *of the domestic market*). Hitachi (14 per cent, using the same main computer technology as Fujitsu, as a result of having been grouped together), Nippon Electric (11 per cent) and Toshiba (4.5 per cent), Mitsubishi *Electric and Oki* Electric.

NEC and Toshiba formed the second two-company grouping, but Toshiba, two years ago, abandoned the business side of big computers to a joint venture with NEC after suffering heavy *losses.* Oki *dropped* out of big computers in 1964, but developed peripheral equipment with Mitsubishi.

The next stage in MITI *directed development was aimed* at VLSIs, lining up Fujitsu, Hitachi and Mitsubishi in one group and NEC and Toshiba in the other. Futher subsidies are being *offered* to the groups for software development.

Fujitsu and Hitachi actually overtook IBM for the first time in the field of general use computers *in 1974, forcing IBM to* pay much more attention to the Japanese. Since then, the technological advances have shifted back and forth, with IBM trying to outmanoeuvre the Japanese by using its size and product depth. The Japanese, however, have managed to keep pace. They can now claim to produce the most *powerful* computers in the world.

Strong position

Producing the most powerful computer, however, is not necessarily the secret to effectively challenging IBM on a global basis.

Unlike the other industries in which Japan has established a strong position around the world, such as cars and electronics, computers require resources and investment much greater than the Japanese can *now afford.*

The Japanese companies must also keep a close watch on the foreigners in their own market in which competition is stiff and where IBM holds about a 28 per cent share. Last year, MITI had to go so far as to warn the domestic and foreign computer companies against price-*cutting competition* to gain larger market shares. This was triggered, apparently, in the aftermath of IBM's introduction of a new series of computers, *early last year, and the advantages* that some foreign makers gained while the yen was appreciating.

The Japanese market for computers is the second largest in the world, after the U.S., with *about 10 per cent of all the* installed units, compared with a 45 per cent share in the U.S.

But the Japanese domestic market alone is not a large enough base to produce a giant computer company. Slowly, *therefore, the Japanese have* been trying to sell their wares abroad, so far with only limited success. None of the computer companies has more than 16 per cent of their sales overseas. Fujitsu, the largest, and Hitachi have *led* the *moves* abroad.

The strategy since 1972, when Fujitsu first invested in Amdahl of the U.S. to take advantage of the American company's advanced technology, has been to gradually build up ties *with* other computer makers with sales agreements, joint ventures and cross licences.

Fujitsu may have taken the lead overseas, *but even its most* important sales ties are still in the form of Original Equipment Manufacturing (OEM) arrangements, where it provides other companies with main frame computers.

Amdahl sells Fujitsu computers under its brand name in the U.S., and Siemens does the same in Europe.

Fujitsu, however, is hoping to break away from the OEM type agreements in the U.S. Negotiations are being completed with TRW, of the U.S., to market a wide range of its products up to medium size computers under the Fujitsu brand. In Spain, Fujitsu has started the production of office computers with Secoinsa.

With these ties gradually building, Fujitsu would like to see about 30 per cent of its computer sales overseas in four or five years.

Hitachi ran into difficulties last year with its OEM computer *exports to the U.S.* because of the financial problems faced by ITEL (which had marketed the Hitachi machines), after IBM introduced its E-series. Exports *came to a virtual halt, and the* company only recently signed an agreement with National Semiconductor (the successor to ITEL's computer division), for *non-exclusive sales in America.*

Hitachi has also signed on with Olivetti in Italy to sell computers on an OEM basis, first just in Italy but later perhaps throughout Europe. In the UK it is starting joint research with ICL. Hitachi would probably prefer to sell under its own brand and through its own networks. But the one Japanese company that tried to do that in Europe with minicomputers, Mitsubishi Electric, in the early 1970s, failed. That experience gave the Japanese a better appreciation of the costs and difficulties involved in establishing overseas networks.

Big success

Hitachi has, however, been very *successful so far in selling* computers to China, with 40-50 *medium* and large-size computers, either delivered or on the order books.

The Japanese now realise that these kind of ties to other companies around the world present the only realistic *approach to future expansion* of the computer business. MITI is now officially encouraging such technological ventures for computers, as well as for cars and aircraft.

These kind of arrangements *not only allow for growth,* but may offer solutions to the difficulties in past economic relations Japan has had with its trading partners.

As in the story of *Gulliver* and the Lilliputians, it may take *the co-operation of many of the smaller* companies around the world to chip away at the IBM giant.

Developments closely linked

TELECOMMUNICATIONS

JOHN LLOYD

TWO INTERTWINED developments have meant that computers and telecommunications are now closely inter-linked, and that the development of the one technology increasingly depends on the development of the other.

First, the post-war development of switching technology has resulted in computerised switching, which, in turn, has seen the development of a range of new exchanges which have appeared during the past decade.

Briefly, the technology of switching had been static for nearly a century, relying on the invention of Almon Brown Strowger, a Kansas City undertaker, who patented the Strowger or "step-by-step" method, in 1886.

Step-by-step involves the selection of contacts — the number corresponding to the number dialled — one after the other. It has been described as "a technology rather like that of a steam engine—occasionally temperamental — but, nevertheless, robust and capable of long service."

The later technology, introduced for the first time in 1940, is known as crossbar, or matrix switching, in which lines are laid out in vertical and horizontal arrays so that each junction represents a possible connection, closed when one number dials another.

Matrix switching, when introduced, was electromechanical — but the control system used to supervise the matrix may be programmed in advance to operate the system in various ways.

At first, this was done by "wired logic"—that is, the "instructions" in the control were inherent in the wire paths built into it. However, the introduction of computers into the exchange meant that the logic was programmable, and could thus be varied according to the computer's software. At the same time, the actual switching could be accomplished by integrated circuits, rather than by electro-magnets or reed relays.

Computerised control, or stored programme control (SPC) as it is known, has been the one of the two principal breakthroughs which has inspired the new generation of telephone exchanges. The other is digital transmission, where the speech is decoded from its analogue structure into binary code, and transmitted as on-off signals then re-coded to analogue at the end of its journey. Digital transmission is at once more rapid, reliable and clearer than analogue signals.

Many advantages

Thus, the new generation exchanges, on the market in the 'seventies, now incorporate both SPC and digital transmission. The advantages for the subscriber are beginning to be obvious: more rapid, reliable, clearer calls and many more features offered on his phone— as automatic call transfer, store facilities, abbreviated dialling, and so on. The further, less obvious advantage is that the new exchanges cost much less to instal and maintain (though the cost of modernising and largely electro-mechanical networks will be high) and, thus, charges will be held down.

The disturbing feature for telecommunications workers is that they are felt to threaten jobs, and indeed thousands of jobs have been lost in telecommunications manufacture. The maintenance of employment in this sector will depend on manufacturers responding to the market for new services and equipment.

The first to develop these exchanges was the American AT&T network: since then, companies like Ericsson, CIT-Alcatel, Thomson CSF, Philips, Northern Telecom and General Telephone and Electronics have all brought on competitive SPC digital equipment, while Siemens and the UK consortium of GEC, Plessey and STC are in the final stages of development.

The main advantages presently offered by computerised telephony, however, will be in the office, where the second major development with which we are concerned has taken place.

First, the range of services offered is larger because of SPC, but second, office communications have themselves become a major growth area.

Electronic mail

The main path driven towards the "office of the future" has been by the electronic typewriter, which has offered limited memory store (up to around five letters) and automatic typing facilities. With a capability for communicating with other electronic typewriters, these machines could operate as a primitive form of "electronic mail," at least within a given company.

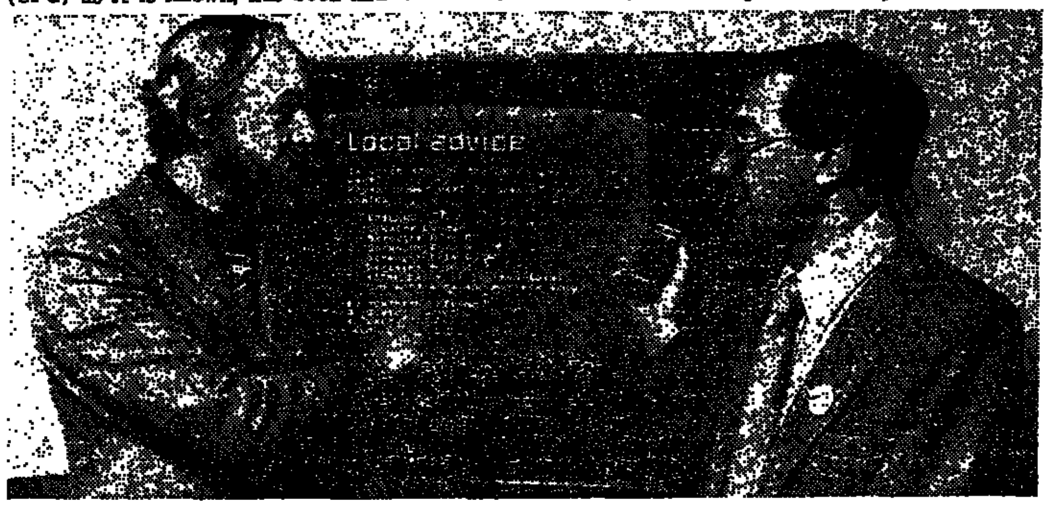
The next stage is the word processor, a keyboard with larger memory and rapid printing facilities. The processor is seen as one way to raise secretarial productivity by leaps: a good deal of retyping can be cut out, and, with text editing facilities built into the processors, even substantial changes can be incorporated.

However, once word processors can communicate effectively, electronic mail has essentially arrived.

Further, word processors will, in the later 'eighties, tend to be linked into data processing centres to greatly extend their storage and flexibility. At the same time, the data processing centre will develop links to intelligent copiers and to secretarial and to managers' work stations, which will consist of visual display units, keyboards and communications facilities.

In short, in a gradual, incremental way, large offices will tend to become highly-automated, with data and voice communications integrated into common systems.

Still further, computerised office exchanges—now appearing on the market, led once more by IBM—will further enhance the speed and variety of message switching and handling.



Communications will be one of the themes of this month's series of four Computermarket '80 exhibitions when visitors in Birmingham, Manchester, Glasgow and London will have a chance to study the Prestel information service. Computermarket opens tomorrow in Birmingham at the Albany Hotel. Above: Mr. Jeremy Mitchell, director of the National Consumer Council (left), with Mr. St. John Sandringham, of the Consumers' Association and head of "Telewhich," at last year's announcement that the consumer organisations are to use Prestel.

Steady increase in automatic tellers

ELECTRONIC BANKING

ELAINE WILLIAMS

WHILE THE age of totally electronic banking is still a long way off, banks have been making steady progress towards automating their operations to the extent possible. For over 10 years Britain's clearing banks have been using computer-controlled automated clearing systems which have speeded the processing of cheques.

They are progressing steadily—through the use of minicomputers and microprocessors — towards greater use of electronics at branches. This development is apparent to the customer through the installation of electronic cash dispensers which can provide a service when the branch offices themselves have closed.

The first of these cash dispensers was introduced in Britain in 1966 by National Westminster Bank. They could only give out £10 a time in exchange for a plastic card which was swallowed by the machine and returned to its owner by post. They were considered by and large an emergency service only.

The offspring of those machines are far more sophisticated. Some allow the customer to find out his bank balance, and to order cheque books and statements.

These new generations of machines are called automatic teller machines because they are able to carry out most of the simpler transactions performed by the human teller. They take less than a minute to handle a customer's request whether a demand for £100 cash, or a balance inquiry. Unlike in the old days, the plastic card is returned immediately.

The heart of all the automatic teller machines—or ATMs as they are called—is based on the use of a plastic card which has a magnetic strip on the back. On this magnetic strip is recorded the essential details of its owner's name, account number and the expiry date of the card.

24-hour service

When the customer wishes to make a transaction he puts the card in the appropriate slot in the dispenser and so keys in his personal identification number. The small computer inside the machine reads both the information on the magnetic strip and the number which has been keyed in. If these are valid, the teller machine will allow the customer to proceed with the transaction.

There are about 1,000 automatic tellers either installed inside the bank's premises or "through the wall," which allows customers, in theory at least, 24-hour banking facilities.

Initially the machines in the system were totally independent. This meant that all business carried out by the automatic tellers had to be accounted for in the traditional way. The small computer inside the teller prepares a statement on the business it has carried out during the day and this is sent to the central computer-operated accounting system.

Every bank has the ability, however, to connect the automatic tellers—via the public telephone network or even a special private link—to the main computer so that while each transaction is taking place the central computer files are instantly updated.

Time saved

As the popularity of automatic tellers grows so the banks find that having a direct line to the main computer saves time and is more efficient. When the tellers are "on-line" to the main computer they are able to give a more comprehensive service to customers than when the computers are not accessible.

In Europe, where there are 2,000 machines altogether, Britain has one of the largest networks. The leaders in terms of sophistication and quantity are undeniably the U.S. and Japan. In Japan automatic tellers have been fitted with passbook readers and a printer to produce written statements. In the U.S. there are more than 15,000 machines.

The need for more electronic banking systems has come about for several reasons; these include the refusal of bank staff to work on Saturdays—previously a peak day for business. In addition the volume of business has increased dramatically since the 1960s—more than doubling in a decade.

Another concern is the increase in robberies from factories and offices. Companies have encouraged their employees to open current accounts so that they can avoid the problems of handling payrolls in cash every week—and so hand this problem on to the banks.

The increase in business has put pressure on banks to provide more staff—and electronics, which allows them to maintain present staff levels, is a great incentive. The impact of central computing was another factor which prompted banks to develop more efficient ways of transferring money between branches.

There is also a movement towards common European payment systems—exemplified by the Eurocheque organisations, the Eurocard "T and E" credit card and the planned European traveller's cheque. This—to be based on the Thomas Cook organisation also plans to use cash dispensing machines. To prove an effective system, most organisations believe that they must pool their resources and share costs.

It is thought that only when the system is arranged on a pool system such as carried out in Switzerland and Sweden can such a system work efficiently.

Electronics opens up endless possibilities for the banking world since it does not restrict the user in his use of the system. For example, if an automatic teller can be linked over the telephone to the central accounting computer there is nothing to prevent other pieces of equipment such as point-of-sale terminals (electronic tills) being linked into the banking network so that a customer can buy goods and have his account debited while he is still in the shop.

Eventually this could lead to a completely cashless society where every item or service purchased could be paid for electronically either on a credit or cash system. We are already seeing the beginning of this trend. In the U.S. some banks have gone so far as to instal their tellers inside the premises of large retail outlets.

In Britain the mood is much more cautious, since talks are going on between banks and major retail stores to decide the best way of tackling the introduction of electronic systems. It is likely that some form of experiment will begin later this year to establish what the problems will be.

Advance payments

However, Prestel, the Post Office's viewdata information service, allows the user to carry out a form of remote shopping. Using the keypad which control's the user's access to information from the large central information computer, it is possible to order goods over the network and quote a credit card number so that the goods are paid for before being received.

This could be extended once the banks decide the future form of banking, since it would not be too difficult to allow the user, through Prestel, to link directly to his own bank and authorise a credit transfer from his account to the vendors. It will be some time, however, before such a system becomes operational, because there are many social considerations to take into account such as the protection of individuals against fraud and other abuses.

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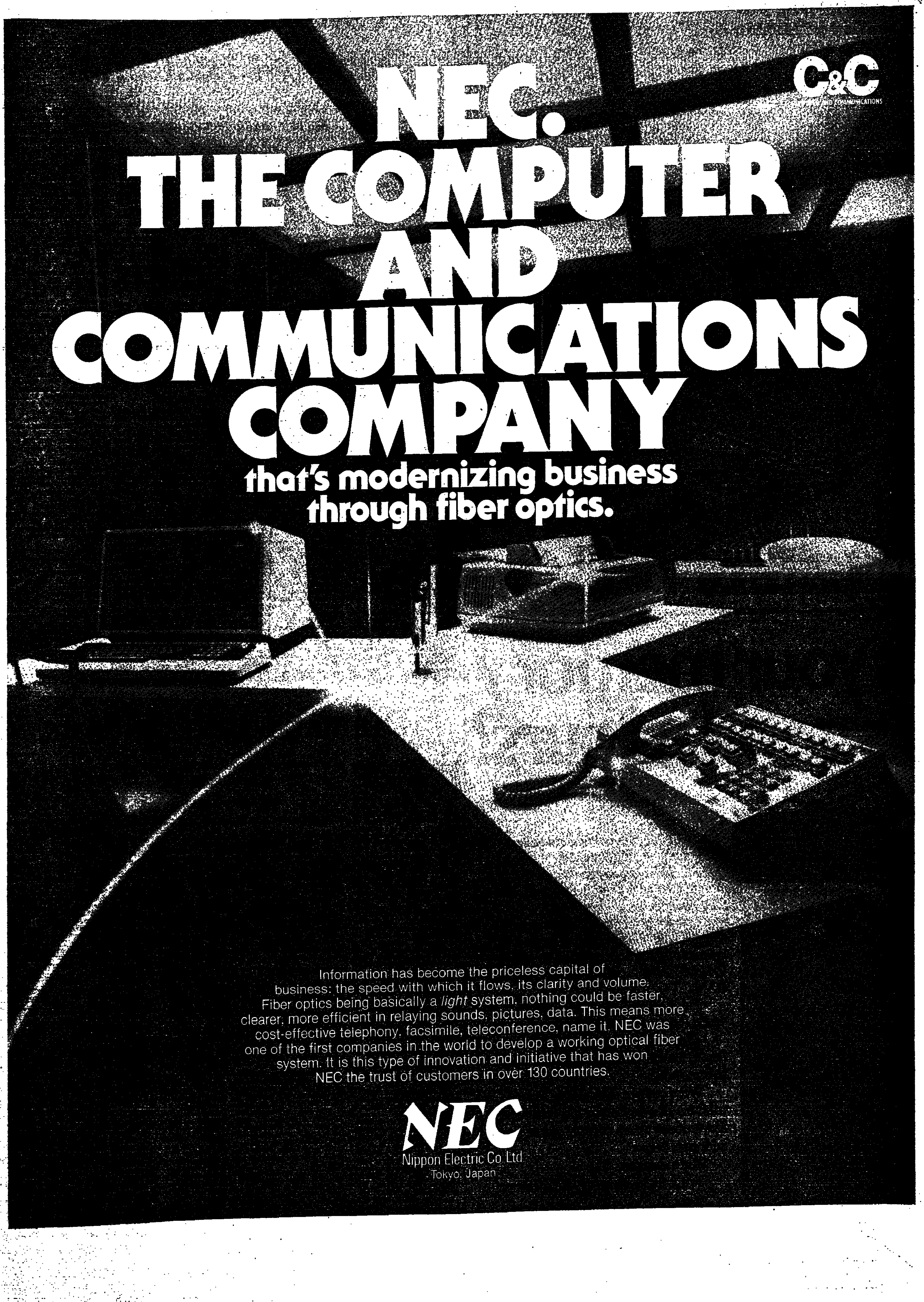
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Information has become the priceless capital of
business: the speed with which it flows, its clarity and volume.
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clearer, more efficient in relaying sounds, pictures, data. This means more
cost-effective telephony, facsimile, teleconference, name it. NEC was
one of the first companies in the world to develop a working optical fiber
system. It is this type of innovation and initiative that has won
NEC the trust of customers in over 130 countries.
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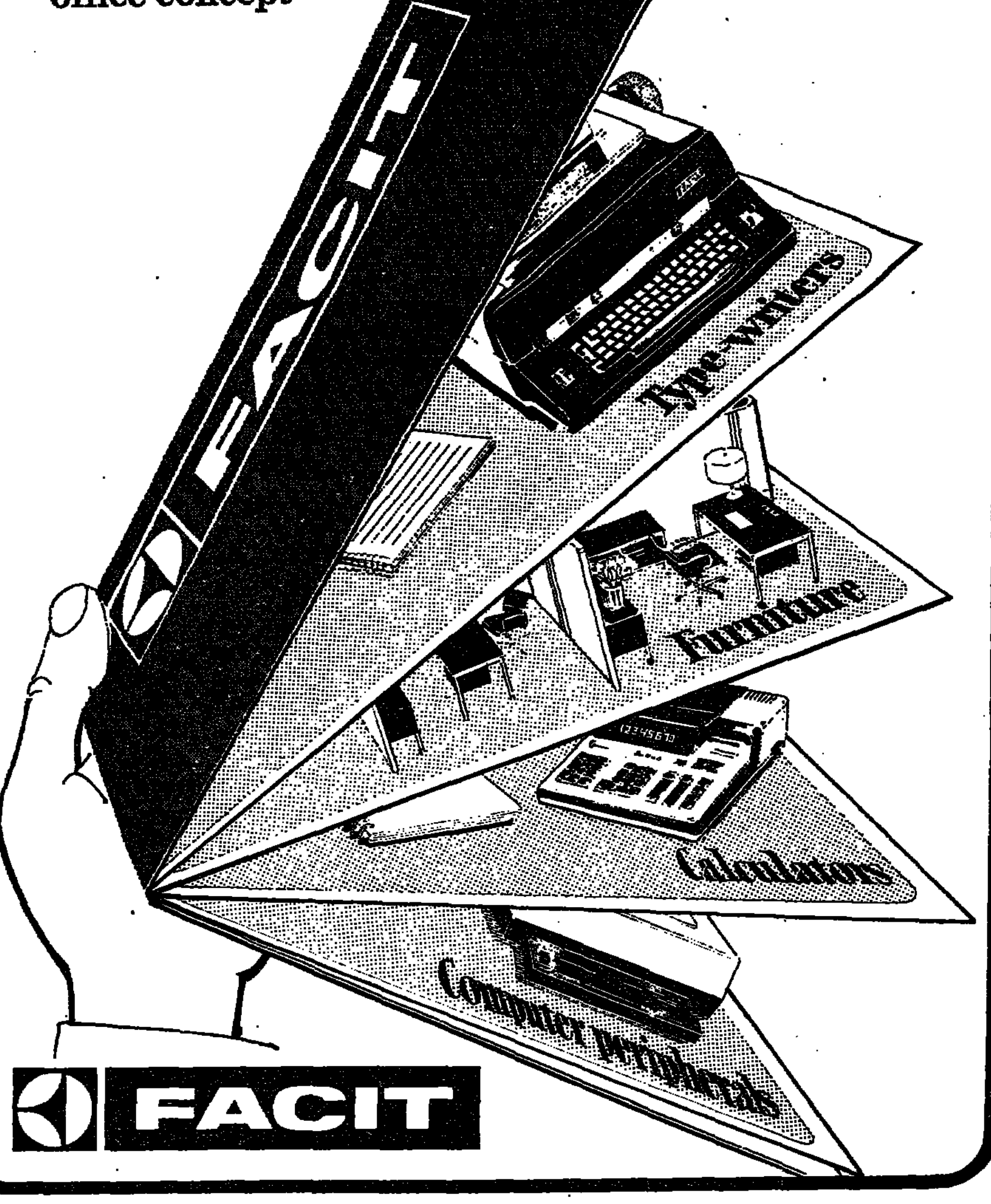


A strong belief that 'small is beautiful'

SMALL BUSINESS SYSTEMS

GUY DE JONQUIERES

THE BELIEF that small is beautiful — or, at any rate, practical—is now firmly rooted among business computer-users. The overall market for small machines and systems is generally reckoned to be growing by about 30 per cent a year and is particularly strong in Europe, where the number of units installed is now estimated to be about five times that of mainframes.

The value of this installed base, put at almost $15bn by one market authority, the Inteco consulting firm, is still only about a third of that of mainframes. But some recent forecasts suggest that in less than five years it will have risen to about half the mainframe level.

There is no clear-cut definition of what constitutes a small computer. A few years ago, it would generally have been taken to mean a minicomputer, or small mainframe. These were developed originally for industrial applications, such as process control, and for scientific and technical purposes. Their name reflected their rather specialised functions, being a contraction of "minimal" computer, as opposed to "maximal" or general purpose machines.

Today, minicomputers are available with a panoply of peripherals and software which enable them to be applied to a wide variety of tasks short of the most demanding "number crunching" operations. Innovations in the design of central processing units, notably the availability of very fast 32-bit processors capable of addressing vast memories, have made the largest minicomputers comparable in power and speed to medium-sized mainframes costing considerably more.

Easy to operate

Further down the market the advent of the micro-processor, consisting of circuitry etched on to one or two silicon chips, has brought with it a host of new and relatively inexpensive machines. These are easy to set up and operate, can sit comfortably on a desk top and can handle a range of common business tasks such as payrolls, stock control and word-processing.

The dramatic fall in hardware prices made possible by advances in technology and manufacturing methods is the major factor powering the expansion of the small business systems market. Computers have now been brought within reach of large numbers of businesses which were unable or unwilling to afford the bigger mainframe machines which dominated the market until several years ago. Purchasers prepared to pay £15,000 or so—the same price, after all, as the managing director's Jaguar—now have a bewilderingly large field of products to choose from.

Another important influence has been the trend away from highly centralised systems, built around a single mainframe machine—access to which could often be gained only by passing through a jealously protective data-processing department. Because computer time was expensive, on-line operations were kept to a minimum and many tasks had to wait until they could be grouped together and processed as a batch.

Increasingly, the tendency today is to bring computer power closer to the user by distributing it downwards throughout the branches of an organisation. This can be achieved in a number of ways, depending on the degree of decentralisation required and on the kind of existing system into which it has to be fitted.

In the U.S., where far-flung computer networks are fairly common, the most popular course has been to enhance the "intelligence" of existing terminals linked to a mainframe. This has been done by equipping them with peripherals which allow more computations to be performed locally, without reference to the main computer.

In Europe, by contrast, the relatively higher cost of leased lines and telephone connections used for data communications has tended to inhibit the use of linked terminals. Most companies have preferred to distribute computing power by installing small business machines intended primarily for "stand alone" (autonomous) use but also capable of being connected to a mainframe or used as part of a network.

The battle for the small business systems market has been joined by contenders converging from at least five different directions, with new entrants announcing themselves almost every week. So far, no single manufacturer can claim the overwhelming supremacy enjoyed by IBM in the mainframe market, and it will probably be some time before the balance of commercial forces stabilises.

In Europe, at least, manufacturers with a background in electro-mechanical office equipment like adding machines have capitalised in their experience in marketing such products to secure a significant share of the market. Nixdorf of Germany has been outstandingly successful, followed closely by companies such as Olivetti, Kienzle, Philips and NCR.

Minicomputer manufacturers have turned their attention increasingly to the business market, though they have adopted varying strategies. Wang and MAI have enjoyed considerable success in the U.S., though the high cost of establishing a marketing and support network overseas has so far inhibited their penetration of the European market.

Sales increase

Digital Equipment, the main manufacturer of industrial minicomputers has been steadily increasing its sales of small business machines. It supplies these both direct to final customers and on an Original Equipment Manufacturer (OEM) basis to systems companies which equip them with peripherals and software before marketing them as part of a complete package under their own name.

This approach has been made possible both by the falling cost of hardware and by the increasing demand for complex software needed for sophisticated applications. Two British companies which have attacked the market with some success from this direction are the software houses Logica and Systime.

The small business systems sector is of growing importance to the big mainframe manufacturers, all of which have extended their product range downwards in recent years. In several cases, this has been done by acquisition. ICL put itself on the map by purchasing the small computer actiities of Singer, while Sperry-Univac strengthened its position, several years ago, by taking over Varian.

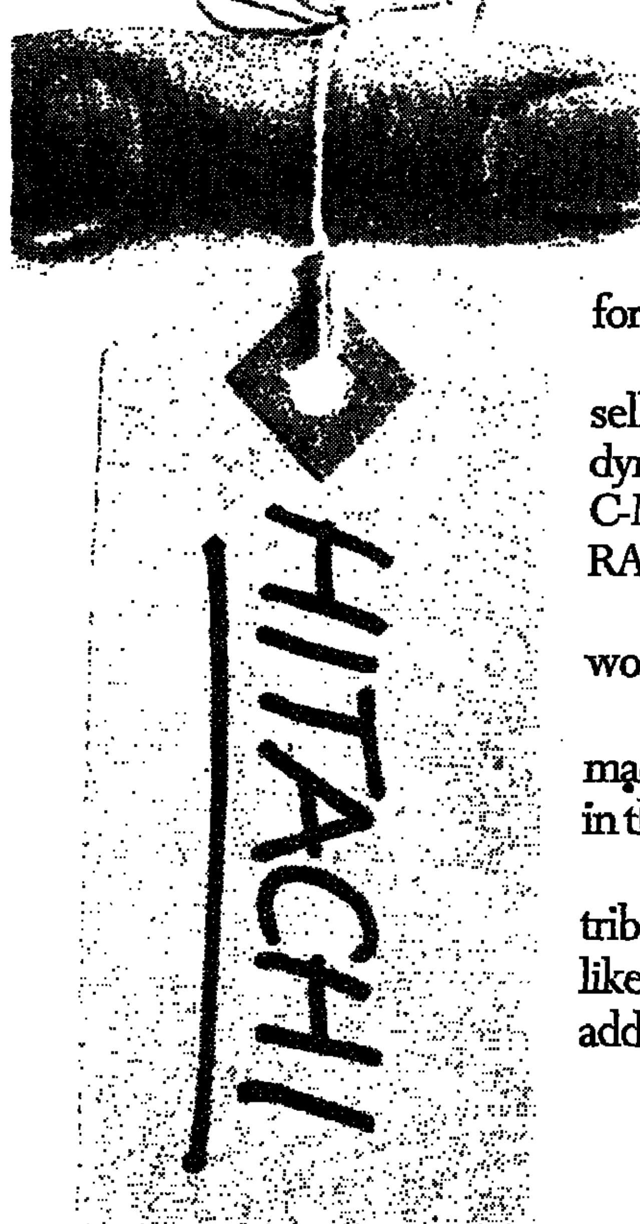
Few mainframe manufacturers, however, offer products below the level of small minicomputers. They have apparently been deterred by the narrow margins to be made on really inexpensive micro-processor based machines and are waiting to see how this sector evolves before deciding whether to plunge in. Many of them tend to emphasise, as a main selling point, the advantages of purchasing from a company which can meet a user's needs as they expand out of a "family" of increasingly large compatible products.

IBM pioneered this approach with its System/3, which sells for between £45,000 and £250,000, depending on the power and facilities required. Introduced almost a decade ago, more than 40,000 have been sold. But delays in the launch of its successor, the System/38, have encouraged a horde of competitors to move in on IBM's customer-base, offering machines that are more modern than System/3 and can be easily adapted to use the software developed for it.

Finally, from the other end of the industry spectrum, the larger semi-conductor companies have been moving into the attack. Producing small business machines, built around components which they manufacture in large volume, represents both a logical step towards vertical integration and an opportunity to add value to their existing product line at comparatively low cost to themselves.

According to Inteco, there are now about 150 suppliers of small business computers priced at up to $500,000 trading in Europe. How much longer they can all continue to thrive, even in a market which has been expanding at its recent rate, is open to question, and it seems inevitable that sooner or later a shake-out will have to take place.

One good reason for believing this is because the falling cost of hardware, or at least of central processors, will increasingly favour large volume manufacturers. By the same token, the provision of applications software, support and maintenance is likely to account for a growing proportion of revenues earned from small business computers in the future. The winners in the longer-term are likely therefore to be those companies which have established a strong marketing network as well as a record for technological innovation.



Dramatic shift in costs

SOFTWARE

GUY DE JONQUIERES

DURING THE past decade, the economics of the computer industry have undergone a minor revolution. The importance of hardware in the cost of a system has steadily declined, while the significance of software—the programmes, operating instructions and other information which a computer needs to do its job—has been rising. It is not unusual nowadays for software to account for as much as two-thirds of the total cost of an installation.

Several factors have combined to produce this shifting balance. Undoubtedly, the most important has been the steady fall in the cost of manufacturing electronic components. This has accelerated dramatically with the development of micro-electronic technology, which has enabled all the circuitry contained in a room-sized computer of the early 1960s to be etched on to minute silicon chips, selling for a few pounds each.

But computers are not much use without information to tell them what to do and how to do it. They require detailed, step-by-step systems programmes to organise their internal operations, compilers to translate human commands into binary machine code, "libraries" of commonly-used routines, such as adding and subtracting, and applications programmes for specific tasks such as the preparation of payrolls or stock-invoicing.

All computer manufacturers make such software available, often at extra cost. But with customers' needs varying widely, the range of computer applications constantly expanding and computing facilities spreading to an ever-increasing number of often unskilled users, there are plenty of opportunities to supply new and more refined types of software, which the manufacturers themselves do not provide.

Over the past 15 years or so, a large number of independent companies has sprung up to meet this demand. It is estimated that in the U.S. alone there are now about 3,500 such companies providing consultancy, systems analysis and programming services, compared with 1,000 or so, a decade ago. Their business is reported to have trebled in value over the same period to almost $9bn a year. The statistics are, not surprisingly, rather less dramatic in Britain. The UK industry is generating perhaps £150m a year in revenues, but it is estimated to be growing by about 25 per cent annually.

Such services are the product of highly skilled brains and are therefore not provided cheaply. A top-grade consultant can command a fee of up to £1,500 a week, and even an independent programmer, called in from outside, will charge upwards of £250. The high level of fees is itself not a negligible factor in the increasing cost of software and services.

More efficient

The days are long past when these companies relied on selling ready-made applications programmes as their main source of income. According to Dr. Douglas Eyeions, Director-General of the Computing Services Association, the industry group, the design of business applications programmes by his members have actually been falling off.

This is because any programme comprehensive enough to cover the needs of all potential customers will probably be too unwieldy to suit the needs of any one individual user. However, a number of firms, known somewhat disdainfully in the industry as "body shops" will still supply programmers to write or refine applications programmes for individual customers.

Instead, Dr. Eyeions says, the past few years have seen a steady growth in the design of systems software. This aims to improve the operating efficiency of a computer by ensuring that processing functions are performed as rapidly and logically as possible. However, as computing power becomes cheaper, and the need to economise on computer time becomes less compelling, ready-made business applications programmes could regain popularity.

Over the past few years, the once-rigid distinction between hardware and software has tended to become somewhat blurred. One example of this has been the tendency among the systems and software houses to buy mini-computers from outside, equip them with peripherals and programmes and then sell them as complete packages, taking a profit on the discount offered by the computer manufacturer.

Advances in technology and reduced components costs have made an even more significant contribution to this trend. Instead of laboriously feeding operating instructions into a computer, step by step, it has become common to build them into electronic circuits which are then "hard wired" into the circuitry of the machine. One advantage is that the information becomes a permanent feature of the computer and cannot be changed inadvertently

The advent of micro-electronics has made it possible to have an entire micro-processor or memory unit designed and manufactured to perform specified functions. But because of the high cost of setting up the necessary production facilities, this is extremely expensive, unless a large volume of output is envisaged.

The frontiers of a software business are shifting in another direction, too. From its origins in data-processing, it is now expanding into new ground as the technologies of computers and telecommunications increasingly converge. Evidence of this merger is to be found in the development of computer-controlled digital telephone exchanges, in sophisticated weapons guidance and military command systems and in office automation.

The office of the future will probably consist of a number of different elements. These will include computers, both central mainframes and smaller machines used for distributed processing, word-processing machines, copiers, facsimile machines, dictation equipment and telephones.

All these different pieces of equipment must be linked together in a complex information-handling system which will allow them to communicate both with each other and with the outside world. Individual offices will be connected by a network of surface and satellite communications capable of handling data, text and voice transmission.

Fitting these different elements into a coherent whole will call for highly-developed software. Clearly, there is no point in hooking a word-processor up to a computer unless the two machines speak the same language. Complicated interfaces must be devised to ensure that this is possible. Switching systems must be designed which make the connections swiftly and at the right time. And powerful management systems must supervise the operation of the whole intricate network.

Expensive

The development of software is, however, becoming increasingly expensive, and the necessary investment can be justified only if there is a reasonable certainty of being able to sell the resulting product to a sizeable market. One British firm which has found this out to its cost is CAP-CPP, which spent substantial sums on the development of a high-level language for programming micro-computers. So far, however, the micro market has not grown as rapidly as the firm had hoped and its financial results last year suffered badly as a result.

In an effort to provide support for the industry, the National Enterprise Board established Insac Products (IPL), two years ago. Its aim was to stimulate the development of software products suitable for export through the provision of state finance and marketing assistance, particularly in the U.S.

Five companies agreed to affiliate themselves with the organisation. As well as CAP-CPP, they are Logica, Systime, Systems Programming (SPL), and Systems Designers, (SDL). As a precautionary step to protect them against the possibility of future takeover bids, it was decided that NEB should take a stake in each company's equity. They were, however, to remain independent companies.

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U.S. faces fierce competition from Japan

MEMORIES

ELAINE WILLIAMS

THE GREATEST strides which have been made in memories (which are used for storing all the information required by computers for their calculations) have been in the area of semiconductor memories. The advancement made by semiconductor designers has been startling and this sector of the micro-electronics industry is fiercely competitive.

The measure of the achievement is that, only a few years ago, the industry was hailing as a major achievement the ability to make silicon chips which could store 4096 bits of of data. Today, chips with four times that capacity are widely used in the industry and new devices, with a storage of more than 65,000 bits of information, are beginning to emerge.

The demand for semi-conductor memories is increasing rapidly. This market is likely to grow at an annual rate of 14.5 per cent by 1982, with the computer industry increasing its share from 19 per cent (as it was in 1978) to 22 per cent by 1987, according to market analysts, Frost and Sullivan.

Semiconductor manufacturers, such as Texas Instruments, Mostek, Intel, Motorola, AMD, National Semiconductors, Rockwell, AMI and Fairchild are just a few of the U.S. companies which have an involvement in some part of semiconductor memory development. However, Japanese companies such as Hitachi, Nippon Electric, Toshiba, Fujitsu, Oki and Mitsubishi have new technology to rival the U.S. organisations.

This is largely due to the four-year development programme which was run under the auspices of Japan's Ministry of International Trade and Industry (MITI). The ministry and the electronics industry have just completed its large-scale integration programme which sought—and achieved—the aim of making large silicon chips.

The Japanese electronics industry seems intent on winning as large a share of the market as possible and is investing more than £150m in order to increase its output by 40 per cent. There is a general shortage of silicon chips at the moment and U.S. manufacturers are unable to meet the demand.

Nippon Electric has almost completed its £50m investment programme which will increase its overall production capacity for integrated circuits by 50 per cent, much of which is in the memory area. Fujitsu and Toshiba are investing £27m and £20m, respectively, while Hitachi's expansion will cost around £20m. Hitachi is committed to bringing its 64k random access memory—confusingly, capable of storing more than 65,000 bits of data, due to the way in which memories have traditionally been designed—into production volumes by April.

However, semiconductor memories are a major part of the U.S. manufacturers' output because the market in the U.S. is so large and is valued at about $1bn. More than half this total is attributed to random access memories. Semiconductor memories are divided into a bewildering variety, each being chosen for its particular revelence to a specific application.

Random access memories, as already indicated, form one of the largest segments in the market and are manufactured by all the major semiconductor manufacturers. Random access memories—RAMs for short—are made in various sizes from 4k (where k, in this case, represents the number of 1,023 not 1,000) to 16k and eventually 64k will be available in production quantities.

Disadvantage

RAMs are divided into two distinct types — static and dynamic. In simple terms the difference between the two is that dynamic devices can be made more cheaply with the ability to have greater capacities than the static counterparts. However, they suffer the disadvantage that they require special additional circuitry to ensure than information stored within them is not lost within a few seconds. Nevertheless, these devices are extremely popular, especially for the larger memory systems, because the special "refresh" circuitry then becomes a small proportion of the overall cost.

However, all RAMs made out of conventional technology have the unfortunate habit of forgetting everything when the power is switched off and so require additional back-up memory systems should the power fail.

Manufacturers also make memory devices called "read-only memories" (or ROMs) which do not lose information when power is removed from the system. ROMs were for a long time the basic components of micro-electronics computer hardware. They are used when the data to be stored is not required to change — for example, a list of parts or any standard list, a small computer programme for a machine tool. The ROM is programmed during its period of manufacture, thereafter it cannot be changed. If you want to change your list or programme you have to buy a new ROM.

Though ROMs are rigid, they are cheap, fast in operation and have a very high storage capacity. Already 128k devices are available when RAMs are only now reaching 64k.

The simplicity of the ROM and its inherent advantage of being able to store information over long periods has led to several types of "offspring" which come under the heading of programmable read-only memories. These memories, called PROMs, can be purchased unprogrammed from semiconductor manufacturers; the user can put in his own pattern of data, instead of having to specify during manufacture of the device. Again, once programmed, the information is unalterable.

The next development in ROMs was the erasable memory which allowed the user by various means to wipe the memory clean. These types of memory are normally found to have applications with the smaller types of computer systems while random access memories tend to be applied to large systems.

But semiconductor memories are really the newcomers when it comes to computer memories. In the 1950s, when computers first appeared, various systems were used to retain information—methods ranged from punched paper tapes to electric vacuum tubes — valves — and a revolutionary device called the Williams Tube. However, magnetic forms of storage quickly became dominant and today they hold an important part of memory market.

Magnetic core memories were once used extensively in computers for storage of data, but their use declined in the technology race to semiconductors, despite advances which have shrunk the size of magnetic core to a fraction of that a decade ago. Magnetic core memory consists of tiny ring magnets, threaded by control wires which magnetise and demagnetise them, according to the pattern of ones and zeros which are to be stored. However, magnetic core memories were bulky, slow and expensive and are only used now for small numbers of applications today.

Several factors

Other types of magnetic storage, such as tape drums and disks, are unlikely to fall prey to attack by semiconductors for many years. Magnetic tape and fixed disk systems are usually associated with large mainframe computers and some minicomputer systems. They are used for storing vast amounts of information.

The choice of a particular storage medium depends on several factors such as the length of storage, how much data is to be stored, security (especially in the case of power failure), cost and the speed of information retrieval. This is the reason why there are such diverse forms of storage, including tape, cassettes, discs and drums. For example, for long-term stability and reliability, drum storage (achieved with cylindrical drums which revolve at very high speeds) are still used for large computing systems because they have very low error rates, even though they are expensive.

Where smaller systems are involved, either cassette or floppy disks are commonly employed since they offer very economical solutions. There is very little difference between the cassette used in computing and those used for conventional audio recording. The major differences are in the electronics which control the flow of information. Floppy disks—which looks like a much thinner version of an audio disc—are another relatively cheap way of computer information storage.

Although the most exciting developments are taking place in the field of semiconductors, there is unlikely to be any dramatic change in the fortunes of other types of memories because of the varied tasks they have to perform.

Market for services still growing

BUREAUX

ELAINE WILLIAMS

DESPITE THE dramatic reduction in the cost and price of computers—which has put them within the range of even the most modest sized concern—computer bureaux continue to flourish. In Europe alone, some forecasters predict that the European computer services market will grow by an average of 18 per cent a year until 1982.

In the UK, the industry is valued at about £350m, and is about fourth in the league behind the U.S., France and Germany. Today, the industry is split into two basic types of service. Simply, computer bureaux can be likened to laundries—they take in unprocessed, untidy information and return it in an orderly fashion.

The oldest type of service which is provided by the bureaux—which has been carried out since the 1950s—is batch processing. Clients send or take information to the bureau—which is typically payroll preparation and non-critical calculations—where time is not a pressing concern. The information is processed as it is received in batches and returned within a day or so.

The second type of service—which appeared in the mid-60s for the first time—is called on-line or interactive processing. This type of service provides the user with a terminal in his own premises which is capable of connecting directly to the bureau's main computer network so that the client can carry out his calculations immediately.

Consequently, this type of service which usually demands more resources and greater reliability of service from the bureaux is usually more expensive than batch processing.

While there are numerous small-sized bureaux, the industry is dominated by a few large companies such as Comshare, Atkins On Line (recently the subject of a take-over), the French group SIA, and Computer Management Gruppen.

Many of these large concerns have decided to seek out specific market areas, rather than to try to compete on every sector of the market which range from business, industrial and scientific applications. For example, Comshare a U.S. company has actively decided to seek this route over the past three years and it has selected such areas as foreign exchange banking, the provision of extensive computers services to both local and central government, as well as stock and inventory control for those carrying out manufacture. It is also starting to provide a new type of service to marketing managers.

Strong growth

In its 1979 annual report, Comshare attributed the growth of its turnover from $25m to $53m in one year to three factors: strong internal growth due to its specialised computer services; the consolidation of its European division and the acquisition of the tax processing business of another U.S. company, Digitax.

Comshare wants to dominate the particular sectors within which it has chosen to work and believes that additional acquisitions of other companies within these sectors will help it achieve those ends. However, such acquisitions are becoming a feature of the industry and will increasing be so over the next few years.

National Westminster Bank owns Centrefile which deals with payrolls and all major banks run similar services at very competitive rates. Computer Management Gruppen is another large bureau which deals with general accounting.

In the engineering field is Atkins on Line which was originally part of the Atkins engineering consultancy but was subsequently taken over by a U.S. company which was recently itself the subject of a takeover by United Computer Services.

Others in the scientific and technical field include the French group SIA and UCC—University Computer Centres and Scicon.

Over the past few years, computer bureaux have had to contend with a major problem. The shrinking size and cost of computers has encouraged companies in the medium and small range to turn their backs on computer bureaux and to buy their own computers.

Bureaux justify themselves because they claim that the cost of the hardware—the physical equipment—is only a small cost of the total expense of computing. About 80 per cent of cost comes from providing the expertise, the people and the programs development.

Decreasing cost

This problem which the bureaux have been trying to combat over the past few years has been exacerbated by the concept of distributed processing which allows companies to have access to computers at many offices and branches and could mirror the type of facility provided by bureaux. This and the decreasing cost of installation and buying the equipment has made companies look more favourably on buying their own systems.

Many of the bureaux have reacted to the advent of distributed processing by helping clients install their own minicomputers, but giving them the additional facility of being able to tie into the extensive bureau network if required.

Another approach has been to provide clients with so called intelligent terminals which are capable of carrying out some of the more mundane, but nevertheless expensive, operations at their own offices instead of through the main computer. This has allowed them to compete more effectively with distributed processing and also relieves the customer of having to maintain his own equipment.

The growing sophistication in telecommunications as they relate to the transmission of data is also having its effect on the industry. Traditionally, computer service companies such as Comshare and IP Sharp have used private, specially dedicated lines so that customers have a guaranteed link between themselves and the bureau.

For example, users of the Sharp service communicate with the company's Toronto, Canada, computer centre via terminals linked into Sharp's own private world-wide packet switched network. However, there has recently been the development and introduction of public data systems over the normal telecommunications which will eventually be improved to such an extent that quality and reliability will be comparable with the private lines.

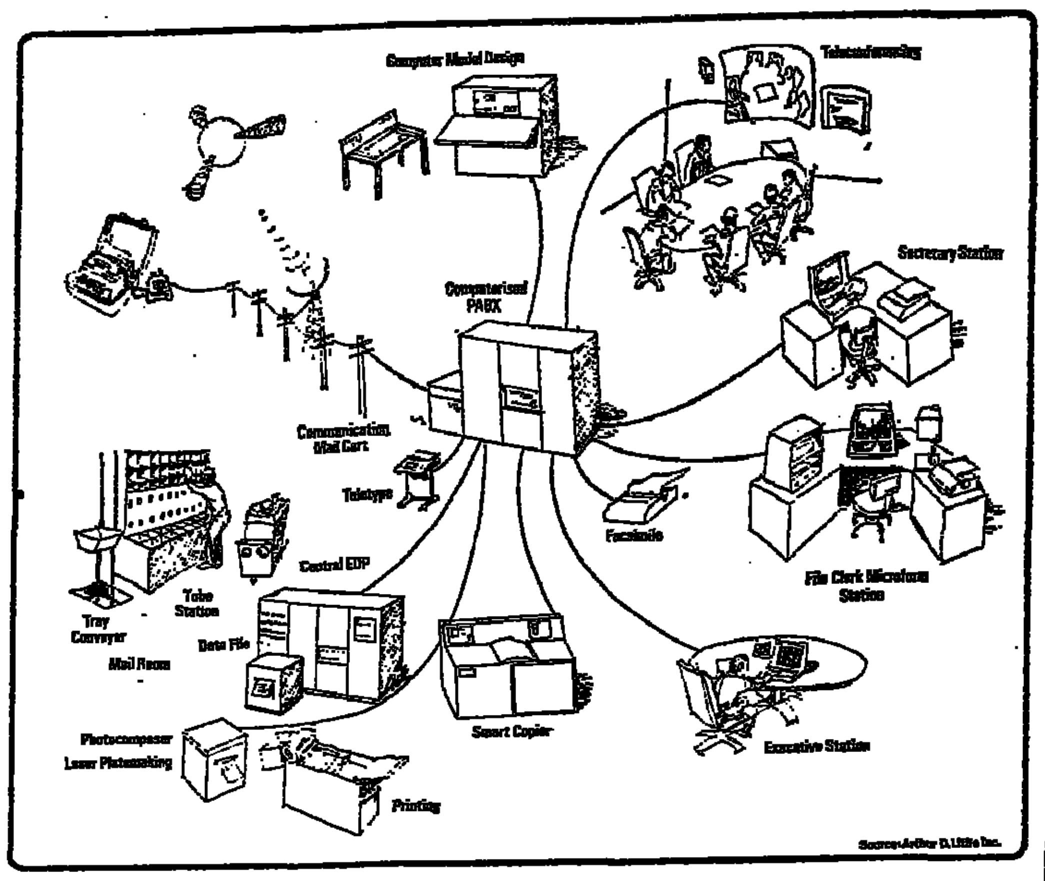
Sharp's service is also accessible via telex, via Tymnet and via satellite or telex links from ships at sea. However, the company says that most of its clients prefer to employ its packet switching network for reasons of reliability and economy.

The importance of telecommunications for bureaux is that with public networks offering good facilities, they will be able to save considerably on their investment in private links while, at the same time, having access to a greater number of cities and the opportunity to attract more clients.

The office in 1990 ...

THIS diagram gives an indication of "the office of the future" in a large company — in around 10 years' time. It is an idealised picture, since real office life will be much more untidy. But it depicts a trend, and shows the main communication lines between the equipment which will increasingly handle, evaluate and produce information.

By 1990, according to Arthur D. Little, the American consultancy, the larger office will have evolved into a system network that includes equipment at headquarters, a subset of equipment for the manufacturing plant, and a different subset for the sales offices, with each segment interconnected.



The next decade will bring radical changes

THE OFFICE OF THE FUTURE

GUY DE JONQUIERES

THE PHRASE "office of the future" conjures up a slightly surreal image reminiscent of the sets from "2001—A space Odyssey." Gleaming electronic hardware emits a series of discreet bleeps and flashes as distant computers converse according to some inscrutably complex master programme. Clean-cut executives, their desks conspicuously free of paper, communicate decisions at the press of a button on a desk-top console.

An alternative, and perhaps no more far-fetched, scenario is that the office as we know it will disappear altogether. Freed by advanced communications technology of the need to congregate physically with his colleagues, the white-collar employee of the future will work from home, transacting business via a compact terminal installed in his study.

He will call up his files on a television screen linked to a data bank and dictate memos into a voice-sensitive machine. This will convert his message into digital code and transmit it instantaneously to its destination. If he needs to confer with his colleagues, he can do so through a special telephone fitted with a video display which will enable them to see as well as speak to each other.

Sobering thought

Much of the technology needed to realise both visions is available, or soon will be. But it is a sobering antidote to such speculations to realise that, in the UK at least, still only one in roughly every four offices has a photocopier, one in ten a data processor and one in 40 a word processor.

Indeed, it was only about five years ago that sales of electric typewriters overtook those of manual machines.

Nonetheless, a growing band of companies believes that the next decade will see radical changes in the way in which offices are organised, as continuing rises in wage bills and other overheads and the falling cost of hardware enhance the appeal of automation.

A recent study by Arthur D. Little, the American consultancy, pointed out that in the U.S., salaries of office workers have increased at an annual rate of 7 per cent over the past five years. By contrast, the *costs of communications* equipment, computer logic and computer memory have been decreasing by 11 per cent, 25 per cent and 40 per cent, respectively. ADL forecasts that these economic forces will be a powerful factor behind the creation of a new market, which it expects to grow to \$12bn to \$15bn a year by 1985 in the U.S. alone.

The objective is an electronic office based on a marriage of the technologies of computers, telecommunications and office equipment. In its ultimate form, this vision foresees the virtual abolition of paper as a medium of communication in favour of complex, integrated information systems in which all text, data, graphic and voice communications will be handled electronically.

It seems likely that some elements of this system will be implemented sooner than others. The advent of smaller and cheaper computers is bringing data-processing within reach of an increasingly large number of users, while word processing machines are also falling in price while gaining in power.

It may be some time, though, before companies with substantial paper records find it economic to switch over entirely to computer storage.

However, many of the competitors girding up to supply this market are convinced that the richest spoils will fall to *those who can offer a complete* range of equipment from which a customer can build up an integrated system over time. Predictably, the field is crowded with American entrants, with giants such as IBM, Xerox and even Exxon well-represented.

IBM, with its huge marketing strength and its long experience in both computers and office machinery, has also been sharpening its strategy in the communications field. It has for some time been selling successfully a private automatic branch exchange. Now, through its interest in Satellite Business Systems (SBS), it is poised to enter the large-scale communications network business.

SBS, which is expected to enter operations during the next year or so, will permit wide-bandwidth voice transmissions to be beamed between ground stations. One of its major applications will be to enable corporate executives in in different parts of the globe to participate in multi-way conferences.

Initially, the system is likely to be expensive, with ground stations each costing about \$250,000 to instal, and probably only the biggest companies will be able to afford it. But in time, SBS facilities may be made available to smaller users on a time-sharing basis.

It is likely, however, to face stiff competition from Xerox, which is developing a less futuristic, but arguably more flexible, land-based business communications system code-named X10.

Competition

Powerful as IBM is, there are chinks in its armour which its competitors have not been slow to exploit. It is thought to have encountered some difficulty in developing its ink-jet printer and its office products division is still looking for a satisfactory successor to the famous "golf-ball" typewriter which revolutionised copy-typing in the 1960s.

Olivetti has been particularly active in penetrating IBM's European markets for office products, offering an expanding range of electronic typewriters. The Italian company has also greatly strengthened its presence in the computer market recently by concluding agreements to distribute large IBM-compatible mainframes made by Fujitsu/Hitachi of Japan and medium-sized machines manufactured by the U.S. company IPL.

Exxon is a powerful recent entrant into the field. It has spent more than \$100m equipping itself with the wherewithal to provide office of the future systems. Its interests include Zilog, a micro-electronics company, Vydec, a manufacturer of word-processors, Qwip, a producer of telephone facsimile equipment, and Delphi, which makes computers.

An agreement was reached last year between Delphi and Nexos, the office equipment organisation set up by the National Enterprise Board. Nexos has acquired the UK manufacturing and European marketing rights to the American company's Delta 2, an enormously powerful computer designed to be the core of a fully-electronic office.

Nexos, which is also linked with Logica, the British software house, and Muirhead, which makes facsimile machines, aims to provide integrated office systems in which voice communication will be particularly important. It is looking closely at technology which will enable computers both to respond to spoken commands and to store information in the form of speech.

Another British venture, with which both the NEB and the Post Office are associated, is the Prestel viewdata service. This uses a television screen to display data transmitted on telephone lines from a central computer store. Aregon, an NEB subsidiary, recently launched a Prestel office communications system which will allow even staff unfamiliar with computing to retrieve, feed in and edit information.

Big European companies with diversified interests in electronic and electrical manufacture are sharpening their strategy in the office market. GEC of Britain has complemented its activities in computers and telecommunications by purchasing A. B. Dick, the American office equipment company, while in Germany Siemens is starting to market office products of its own.

ITT has a strong position in *Europe as a major supplier of* communications equipment to PTTs, largely through local subsidiaries. It recently acquired Qume, which makes word-processors, markets Qwip facsimile terminals in Europe and has been aggresively selling PABX equipments.

Among the European companies, Philips appears the closest to defining a coherent overall strategy towards the office of the future. It is strong in all the relevant technology and products and is understood to be on the verge of an internal reorganisation to ensure that it exploits their development and marketing potential.

ICL, Honeywell and Burroughs have all been expanding their office computer ranges, and ICL is developing applications packages embodying both computers and word-processors. These are aimed particularly at professional customers such as lawyers and doctors.

Sperry-Univac, on the other hand, appears to be taking a more cautious approach and waiting for a clearer pattern of demand to emerge before declaring its intentions.

There may well be a case for adopting a prudent approach to the office of the future. So far, the market has been to a large extent technology-driven, and it has yet to be seen how closely some of the more ambitious projects for integrated systems correspond to the needs of their eventual users.

It is possible that, without careful analysis of the complex forces which determine the pattern of office life, some of these systems will impose an unnatural and too rigid discipline on the employees whom they are designed to assist.

But with new entrants pouring in all the time, the market is certainly going to grow even *more competitive. Those who* delay for too long risk finding it difficult to catch up.

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Great rivalry between designers

SEMICONDUCTORS

ELAINE WILLIAMS

THE COMPUTER and semiconductor industries share a common interest, being dependent upon each other for their mutual survival and growth. Inside a computer are hundreds of components with several different jobs to perform.

They may be part of the computer's memory, storing information before and after calculations are performed; or they may be part of the sophisticated logic which makes up the processor—the "brain" which carries out the computations—or they may be part of the circuitry between the computer and the outside world. For example, a computer may have to send instructions to operate a machine tool, take readings from instruments, or simply read the characters being typed on a keyboard.

All these different requirements are met by integrated circuits which are manufactured using only two basic semiconductor technologies and their derivatives. All integrated circuits—silicon chips—are built up like layers of a cake using processes of etching away areas of the silicon chip and adding various types of impurities to give the required electrical characteristics and patterns for each circuit. Each layer is an individual step in the manufacturing process and any reduction in the number of steps without impairing the circuit's performance saves money and time.

The two main technologies for making integrated circuits are called the Bipolar and the Metal Oxide Semi-conductor. The major differences lies in the basic elements from which the circuits are fabricated on the chip.

Bipolar technology uses the bipolar junction transistor as its basic component while MOS uses the field effect transistor. In simple terms, this means that the bipolar circuits are capable of faster speeds than MOS, while MOS is easier to make because it requires fewer manufacturing steps, is cheaper as a result, more transistors can be packed into a given silicon chip and MOS consumes less power.

As a result, bipolar integrated circuits are used for the high-speed logic required within the computer, and, because of various other characteristics, is well suited for the interface devices which ensure that control signals to and from the computer to outside equipment are mutually understandable.

MOS, on the other hand, is found in the computer's memory—because it can be used for large memory arrays—and also is used to make microprocessors.

Power consumption

There has also been great rivalry between designers for bipolar and MOS circuits as each has tried to overcome the disadvantages of their own technologies so that they can compete more effectively in areas dominated by the other.

So the bipolar technology tried to reduce its power consumption which resulted in a variant known as low-power Schottky TTL, while another derivative called Integrated Injection Logic or 121 appeared to prove that bipolar could pack almost as many transistors in as small an area as MOS. At the same time it used another variant called Enotter coupled logic—ECL—to speed its operation even further.

MOS's answer to improvements in bipolar has been to increase the density of its circuits even more, which gives it an impressive—but not unassailable—position in high-density circuits as well as trying to speed up its operation to rival bipolar.

When MOS was first used in the mid-1960s it was the positive version PMOS which was used. Then the negative version—NMOS—was adopted because this proved to operate at much faster speeds. A combination of the two called complementary MOS speeded up MOS even more and reduced the power consumption and also allowed the circuit density to be increased.

It has been the demands of the computer industry with the aims of making faster and more powerful computers which have put the pressure on semi-conductor manufacturers to increase the number of circuit elements on a single chip by reducing the size of individual elements. New variations in MOS and completely different technologies have been hailed as major breakthroughs in building the high-density circuits required for storing large amounts of digital information in tiny areas on a silicon chip.

Designers in MOS took another look at the basic element—the field effect transistor—and decided that for high-density memory applications this could be replaced by something simpler—the charge coupled device. The charge coupled device was considered to be the most promising of the technologies for mass storage until it was ousted by another—CCDs.

These are a pattern of conductors on the surface of the chip which propels electric charge-repressing the binary data—through the material until it reaches its required destination where it is stored. Simply stated, the CCD operates as an array of capacitors that pass electric charge from one to another and as a memory this charge can be stored for up to a year.

New applications

Because of its very simple construction CCDs are very cheap to fabricate and also capableof being made into very high-density circuits. Also, their method of construction means that CCDs have other important applications outside the computer industry for light image sensing, and cameras for low light levels have been made using them.

Unfortunately, CCDs appear to have been overtaken by a more promising technology called bubble memories which, surprisingly, is not based on any of the two basic technologies. This holds the hope of very high-speed density circuits for memory applications.

Bubble memories have developed very rapidly over the last year or so and now show more promise than the rival technology of charge coupled devices. Bubble memories are being designed by companies such as Texas Instruments and Rockwell in the U.S. Plessey in the UK spent much time and effort in research but recently decided to opt out of the market. It was the only European company with an active interest in bubbles.

This type of memory is intended to be used for mass storageof information to rival the standard large-capacity memory systems of magnetic drum, tape and disk. Bubble memories are made out a magnetic material—special group of synthetic garnets to be precise.

A thin transparent layer of garnet lying on a special supporting layer called the substrate is used for the memories. This thin layer is divided into microscopically small areas called domains which each act as tiny individual magnets.

Under normal circumstances the domains have very irregular shapes but when a strong magnetic field is brought near them—the field usually being supplied by a permanent magnet—the domains shrink into neat cylinder shapes which are called bubbles.

The thin film of garnet is divided up into definite geographical locations so that the presence or absence of a bubble at a particular point represents a binary 1 or 0 which is used for all computer calculations.

Any memory system must be able to generate the ones and zeros and allow the computer to read the information it has stored without the data being destroyed or distorted in the process.

Bubbles—the shrunken magnetic domains—are created when a pulsed external magnetic field is applied to the chosen location within the garnet where it remains until the information is required to change.

The most common technique used to read information from this type of memory is based on the "magnetoresistance" effect. A special detector made of Permalloy has the property that its resistance changes when a bubble flows past it—so it is possible to differentiate between a binary 1 or 0.

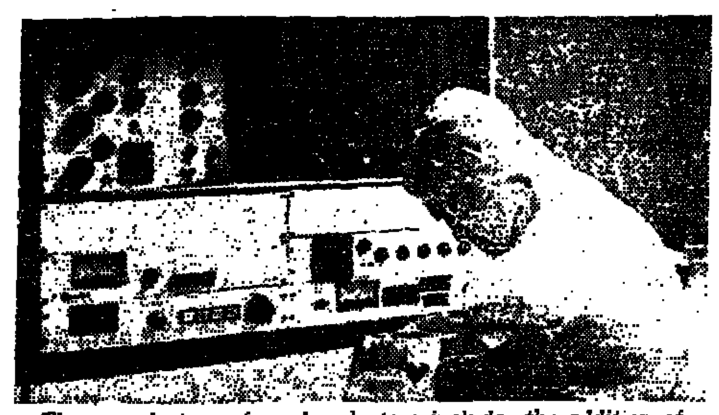
But every time the computer calls for a bit of data to be read from the part of the memory where a bubble is stored, the bubble is destroyed. Therefore, to ensure that the memory is left as it was before its contents were read, it is arranged that the bubble divides into two. So, when one bubble is destroyed its twin remains preserved in the store.

High capacity

Bubble memory promises a storage capacity of up to 1bn bits per square inch of material. Both Rockwell and Texas Instruments have memories which can store 250,000 bits of information while Intel, has a 1m bit device. But both TI and Rockell are unlikely to be far behind. It is possible that by the end of the 1990s the capacity on a standard-sized chip could reach a staggering 256m bits.

Also, because bubble memories store information magnetically, they do not lose information when the power is switched off. And they operate on very low power so can be operated from batteries, if required. At the moment bubble memories are quite expensive compared with other circuits and systems used for memory storage but the price inevitably will fall.

This is just a small example of the types of technology which will be coming into common use in the 1980s to keep computer manufacture equipped with the means to ensure that future products are competitive.



The manufacture of semiconductors includes the addition of elements by ion implantation, as seen here at the new Harris plant in Florida, U.S.A.

CORPORATE INVESTMENTS IN U.S. SEMICONDUCTOR COMPANIES TO END '79

U.S. semiconductor company	Corporate investor or acquirer	Acquirer's country
Advanced Micro Devices	Siemens	W. Germany
American Microsystems	Robert Bosch Borg Warner	W. Germany U.S.
Analog Devices	Standard Oil of Indiana	U.S.
Electronic Arrays	Nippon Electric	Japan
Exar	Toyo	Japan
Fairchild Camera	Schlumberger	Netherlands Antilles
Frontier	Commodore International	Bahamas
Inmos	National Enterprise Board	UK
Interdesign	Ferranti	UK
Intersil	Northern Telecom	Canada
Litronix	Siemens	W. Germany
Maruman IC	Maruman	Japan
Micropower Systems	Seiko	Japan
Monolithic Memories	Northern Telecom	Canada
MOS Technology	Commodore International	Bahamas
Mostek	United Technologies	U.S.
Precision Monolithics	Bourns	U.S.
SEMI, Inc.	General Tel. and Elec.	U.S.
Semtech	Signal Companies	U.S.
Signetics	Philips	Netherlands
Siliconix	Electronic Engr. of Calif. Lucas Industries	U.S. UK
Solid State Scientific	VDO Adolf Schindling	W. Germany
Spectronics	Honeywell	U.S.
Supertex	Investment group	Hong Kong
Synertek	Honeywell	U.S.
Unitrode	Signal Companies	U.S.
Western Digital	Emerson Electric	U.S.
Zilog	Exxon	U.S.

Source: Morgan Stanley Electronics Letter.

Unions are less than optimistic

THE IMPACT ON EMPLOYMENT

CHRISTIAN TYLER

A RECENT British Government survey of the employment effects of micro-electronic technology concluded: "The overall employment effect is virtually impossible to guage. However, past empirical work suggests that, in the long run, technical change has been beneficial to both output and employment."

This survey, from the Department of Employment in December, was at pains to say that much of the alarm about mass unemployment from automation was based on wrong assumptions or showed an ignorance of economic history.

But, forgetting the wilder predictions, it is quite apparent that even the sanest of commentators are far from sure that the effect will be beneficial once again. There is, of course, particular concern in the head offices of trade unions, especially in Britain and in the rest of Western Europe.

Their worry is that the new technology, cheap and accessible as it is, will merely compound the problems faced by Western economies during the rest of this decade.

In other words, although productivity improvements (of the kind technical innovation can yield) have traditionally been accompanied by rapid economic growth and an increase in employment, there is no certainty that the virtuous circle will continue.

British and European trade union leaders—one of whose functions it is to defend jobs at Government level—believe that in the coming years employers will harness micro-electronics to save labour rather than increase output in a stagnant economy.

Researchers at the European TUC, for instance, have said in a major review of the scene last November that new technology does not automatically increase demand for goods and create new job opportunities for those displaced by it. In the EEC countries in general, between 1958 and 1967, gross domestic product grew on average by 4.5 per cent a year and employment by 0.2 per cent a year. But since then, the picture has become less rosy.

West Germany

The ETUC cites West Germany as one example—a country where labour productivity rose 3.8 per cent a year between 1971 and 1975, but gross national product by only 1.7 per cent. Hours worked fell by 1 per cent—but so did employment. The unemployment rate rose from 0.7 per cent to 4.6 per cent.

Although the displacement of workers will be particularly marked in some sectors, the overall impact may be lost within the general problem. The effect might be measurable rather than significant—if there were the statistical means for measuring it.

But it is now generally recognised that the rate of adaptation to new techniques will be slower—in some countries worryingly slower—than predicted when the silicon chip first entered the political debate. That will tend to mitigate its effects.

At the same time, it is also accepted—not least by trade unionists themselves—that the consequences of not adapting could be far more serious for jobs than the displacement effect.

Changes needed

Governments may be over-optimistic when they describe the microelectronic revolution as the engine of a new economic miracle for those countries, such as Britain, which are waning forces in world manufacturing. But it is probably true that unless those countries rapidly take up both the manufacture and the industrial application of silicon chips, they will lose out heavily both to the U.S. and Japan and to cheap-labour countries of the Third World.

The forecasters are much more confident when it comes to assessing the way in which microelectronics will change the structure of employment, and thus identifying broad areas where retraining would pay dividends or where Governments with positive labour market policies can usefully intervene.

Generally, the impact on manufacturing industry is expected to be less than in the service sector—especially office administration and the financial world. But within manufacturing, clearly the electronics industry itself will see the fastest changes.

So far, the net employment effect appears to have been negative. Other areas where significant changes are predicted are robotics, machine tools, goods handling. Countries slow to seize the new technology could suffer badly in these sectors.

The motor industry, according to one U.S. expert, could become the third largest user of silicon chips, after the computer industry itself and telecommunications (where the installation and maintenance end will contract but the service end expand).

This suggests a major upset in the motor electronics companies, with the possibility, as the unions see it, of European companies losing to the Americans and the Japanese.

Typesetting and television assembly are two other processes where large employment effects are expected. In West Germany an estimated 35,000 typesetters jobs have already gone since 1972, and their union, IG Druck und Papier, recently fought a long strike over job security and earnings. A similar inconclusive battle was fought at The Times and Sunday Times, of London.

The sheer number of components, and the number of man-hours needed to manufacture components are likely to fall dramatically. But, generally speaking, manufacturing processes are not seen as the main area of job displacement, at least in the short term.

It is in the service sector that there is likely to be both a large employment effect, and, possibly better prospects for job creation, despite the recent downturn in the rate of growth of clerical employment.

The European TUC expects the numbers employed in distribution, hotels and catering to rise during the 1980s after having stayed roughly constant in the past. Community and personal services, it estimates, should continue to expand. But in these areas like transport, communications and finance where the impact of the technology will be great, the employment trend will be downwards.

Most of the trade union studies agree that women's job opportunities will be severely curtailed as word processors take over the more menial office tasks. At the same time, the increase in office capacity could create more senior clerical and administrative posts that women could fill.

An example

In the UK, for instance, manufacturing employment fell by over 8 per cent between 1971 and 1976, while employment in the services rose 10 per cent. The number of women clerical workers rose from 2.6m in 1968 to over 3m ten years later. But since then, the growth has been slowing.

One clerical union has estimated that the productivity of women who type can be doubled by word processors. That might yield a general productivity improvement in the clerical and administration area of 50 per cent. If only 20 per cent of British offices were to go over to word processors by 1983 that would mean the loss of 250,000 jobs, unless there was an increase in output.

The other group of workers to feel the pinch would be the school-leavers—already facing serious unemployment in EEC countries. Their lack of skill would make them particularly vulnerable, and some serious thinking about school and technical college or university curricula seems to be in order.

In manufacturing industry, at least, the vacancies will be for the semi-skilled and the technician—skilled maintenance men could become increasingly redundant.

Threat of staff shortages

RECRUITMENT AND TRAINING

MICHAEL DIXON

"COMPUTER PEOPLE are supposed to be leaders of change," sighed Mr. George Penney, manager of careers projects at the National Computing Centre in Manchester. "But in this respect at least, they are just as conservative — or even as reactionary—as anybody else."

By "this respect" Mr. Penney meant the selection of people for training as computer programmers and operators. The supply of these skills has been a matter of concern for some time, and not only to the NCC. Computer pundits in the United States and the rest of Europe, as well as in the United Kingdom, have been sounding warnings for years that the number of people being trained is nowhere near enough to meet the demand. The need for such skilled workers seems bound to develop with the spread of microprocessor technology.

Asked who would be to blame for the threatened shortages of appropriately skilled programmers and operators, most employers would probably criticise their country's education system for failing to produce enough youngsters adequately qualified for training.

This is because there is a *widespread assumption among* employers of all kinds that only people with well above the average educational attainment, as measured by passes in public examinations, are capable of being trained successfully.

Before being even considered for admission to training as a programmer in the UK, for instance, a young man or woman is generally required to have a minimum of four pass-grades in the Ordinary-level exams of the General Certificate of Education, which are usually taken at the age of 16-plus.

Often, it is insisted that one of the passes must be in mathematics. And many employers go further, requiring five O-levels, or in the case of the Civil Service two passes in the GCE Advanced-level exams taken at 18-plus, or in the case of some local authorities, banks and so on, even a degree.

But Mr. Penney and colleagues at the National Computing Centre have long doubted that such arbitrarily defined specifications of "educational success" are a reliable measure of a person's ability to succeed as a computer programmer or operator.

To test their doubt they started a special scheme of training in 1976 for these kinds of work, calling it the NCC Threshold Course. The scheme was thrown open, through Press advertisements and local careers offices, to people aged 16-19 who were either unemployed or in a job with no career prospects.

Selection methods

None of the applicants was excluded from consideration for one of the training places available, on the grounds that he or she had failed to gain pass-grades in formal educational examinations. Instead, whatever the applicants' previous record in education, all were subjected to the centre's own methods of selection.

These included four "paper" tests. Two examined the applicants' general-reasoning ability. An earlier study of programming staff had indicated that this kind of ability, as measured by similar kinds of test, seemed to have little connection with whether the programmer was *regarded as good or poor at the* work. But those responsible for the Threshold scheme decided that all trainees would need a certain minimum reasoning capability if they were to follow the course adequately.

One of this pair of tests put the candidates under pressure of time in working out the problems which, although sounding ability to reason in terms of numbers and diagrams, all required some skill with words. The other of the pair involved no time-pressure or verbal reasoning, being entirely pictorial in form.

The remaining pair of tests sounded abilities which the *previous study had shown to be* associated with success as a programmer, although neither is evidently singled out for development in the formal education system. The first ability is speed and accuracy *in performing clerical tasks.* The second is the ability to deal mentally with spatial problems.

As a second stage in the process of selection, the candidates were interviewed according to a *predetermined pattern* by either senior consultants from the NCC or by college lecturers, all with experience in data-processing.

The interviewers' comments, along with the results in the four tests, were taken into account when choosing from the 1,639 serious applicants, the 452 admitted to the training and whose subsequent progress was recently described in the *centre's first report on the* Threshold scheme.

The report *(Data Processing Staff Selection—a Validation Study,* available from the NCC at £5) is too detailed and complex to be described fully here. But a fair idea of the Threshold *experiment's challenge* to the prevailing belief that general educational qualifications are a precondition of success, is provided by the first 100 programmers who obtained their jobs directly from the course.

Of these 100, no fewer than 35 would have been excluded even from consideration for training by the normal minimum criterion of four pass-grades at *Ordinary-level, or the* equivalent of a grade-one ranking in the Certificate of Secondary Education—the "less academic" alternative exam at 16-plus.

If the number of O-levels, or the equivalent, had been raised to five, about 48 of the practising programmers would not have been allowed to start the training. Ony seven would have satisfied the Civil Service's *requirement for two passes at* GCE Advanced level. None of the 100, of course, was a graduate.

False notion

Moreover, the widespread notion that a 16-plus pass in mathematics is a prerequisite for success in computer programming was exposed as a total myth.

"This finding confirms a point *that NCC has been making to* schools and careers officers—but with seemingly little effect—for some years, that ability in maths is not the most important criterion in selecting data processing staff," *says the report.*

But there was one intriguing subsidiary discovery. Unlike O-level maths, the equivalent "less academic" CSE grade one in mathematics did seem to denote ability at the important skill of spatial reasoning.

The report's own summing up of the centre's experience with the first 100 programmers is as follows:

"When we compare this with the standard of two Advanced levels demanded by most employers (including national government) and with that of a degree demanded by many others (including some local authorities), we cannot but wonder what is the difference between the programming to be done in those organisations, and that to be done in the installa*tions employing* the Threshold programmers."

But if the NCC's experiment has shown that supplies of much needed skilled computer staff need not, in practice, be limited by employers' hide-bound *insistence on* arbitrarily defined educational "qualifications" for entry into training, few employers so far seem inclined to heed the message. It is the sight of, if anything, more employers raising the entrance barrier to degree-level, that has driven Mr. Penney to the sad conclusion that computer people are as reactionary as anyone else.

While they remain reactionary, it appears plain that many potentially-able programmers and operators will go on being wasted in dead-end jobs or even unemployment as the *threat of critical staff shortages* continues to develop. The blame, however, will belong not to the education system, but to the employers.

Trade poised for a revolution

RETAILING

DAVID CHURCHILL

THE RETAIL trade is poised on the verge of an electronic revolution which many retailers believe will be as far-reaching as the introduction of self-service in shops in the 1950s and 1960s.

Already, the major supermarket multiples are installing *experimental laser-scanning* electronic checkouts into several of their stores, with the hope that by the mid-1980s most of their large superstores will be operating equipment of this type.

Although the initial investment costs will be substantial—Tesco alone is planning to spend up to £90m on new electronic checkouts — retailers believe that the greater stock control and improved labour productivity will be one of the key ways in which rapidly rising costs throughout the decade will be kept under control.

While the computer giants IBM and NCR seem likely to dominate the market for the most sophisticated of the new systems, research is already being carried out for the possible next generation of *retail technology.*

There are, however, basically three levels of sophistication at present in the new computerised electronic systems available to retailers.

First, there are the electronic units that perform almost exactly the same work as the electro-mechanical units they are due to replace. The manufacturer has simply replaced the internal, electro-mechanical components with modern electronic technology. Prices, therefore, can vary enormously according to whether the unit is needed to serve only a few customers a day, or needs to stand up to the pounding received at a busy supermarket checkout.

Second, at a more sophisticated level, are the so-called "stand alone data capture units." These perform all the normal functions of a cash register, but also record information about sales on an internal magnetic tape cassette which can be removed at the end of each day — or once a week — and taken away for computer processing.

Laser-scanning

Third, at the top end of the market, are the fully computer-controlled systems which incorporate laser-scanning.

The success of laser-scanning depends on how fast Britain's manufacturers are willing to print the special bar-codes on their products. Each grocery or non-food item sold in a modern supermarket will have to have its own unique 13-digit number which is translated into a series of short lines, or bars, of varying thickness.

Numbers for each product are allocated by the trade-sponsored Article Number Association, which has some 10bn numbers available in its data banks.

At the cash desk, the cashier passes each item over a low-power laser-scanner built into the checkout which reads the bar-code and transmits the information to an in-store computer linking all checkouts. The current price of the item in that store is then fed back by the computer to the checkout where it, and a description of the item, appears on a visual display panel next to the cash register.

Simultaneously, the information is listed automatically on the till receipt, which prints *both the name of the item and* the price and thus enables the shopper to see exactly what each item cost. This process takes a fraction of a second and, because the cashier is not manually keying in prices, the whole checkout operation should be both faster and more accurate than a traditional system.

Optimistic

Not surprisingly, therefore, retailers expect shoppers to accept the system with enthusiasm, even though some consumers may be upset at the loss of price-marking.

But it is not entirely out of altruism that the major supermarkets are devoting considerable management time and are willing to spend up to £100,000 per store in capital outlay. The reason, quite simply, is that supermarkets will have access to an unprecedented degree of accurate and fast information about stock levels at any given time.

A large modern supermarket *may* carry at least 10.000 different grocery items and during busy periods whole shelves of the most popular products can be emptied within hours. The problems of ensuring that sufficient stocks are available—and keeping track of what happens to stocks within the store—probably represents the biggest headache for supermarket management. Until now, physical counting of tins has been the most effective method, even if it is the slowest.

The laser-scanning system, however, provides the means for instant stock control. Goods brought into the store are scanned on arrival and the information recorded in the in-store computer.

When the goods are scanned at the checkout, the computer automatically registers the stock depletion. The computer is thus able to alert store management to stock shortages and analysis of the data would enable the cyclical fluctuations *in certain items to be identified.* Eventually, it is suggested that stock re-ordering could even be handled directly from the store computer to the company's depot computer and from there to the manufacturers.

The existence of a comprehensive stock control system that can be achieved by laser-scanning also has the benefit of reducing the level of employee theft. Experience in the U.S. has shown that not only does the system act as a deterrent, but it also enables store security officers to identify the time and location of goods stolen.

Labour costs will also be reduced by cutting the number of staff needed for such jobs as *individually price labelling* every item in the store, because the bar code will already have been printed on to the packet by the manufacturer.

Key Markets became the first supermarket group to launch an operation laser-scanning system in the UK, when the group installed one at its superstore in Spalding in Lincolnshire, last October. International Stores and J. Sainsbury have also just launched their trial systems, while Tesco and others are on the verge of doing so. In the U.S. and Europe, however, such systems have already been in operation for some time.

Although no accurate quantification of the financial savings from the introduction of new laser-scanning checkouts is possible until the Key Markets and other systems are in full operation, some attempts have been made in the U.S. A study by the McKinsey management consultants estimated that a supermarket, with weekly sales of £45,000, could expect to make "hard" savings—such as reduced labour costs from the elimination of price marking—of 0.3 per cent of sales a week.

Stock control

"Soft" savings, such as better stock control, could mean a 1.15 per cent of sales saving after costs, although it is obviously more difficult to quantify such savings. Other estimates, however, suggest that these figures may be on the conservative side.

In the non-food retailing sector, a number of major store groups are planning the introduction of sophisticated electronic checkouts. British Home Stores, for example, last year placed an order for 2,000 IBM electronic checkouts following the success of a trial system at BHS's Wood Green store, in north London. The introduction of this new equipment in BHS was described by its chairman as "a prime feature in the future development of the business."

The John Lewis department store is another major retailer which has accepted sophisticated checkout systems.

IBM, NCR and other manufacturers have special "packages" of systems which are suited for the retailer and can be tailored according to the size and requirements of the store.

Leasing companies under pressure

FINANCE

JOHN MOORE

EARLIER THIS year International Business Machines in the U.S. blamed its deteriorating results on the volume of customers who were switching from outright purchase of computers to lease transactions as they await further developments of IBM's new and more powerful generation of computers.

For the independent leasing companies this should have been the cue for glad rejoicing. But many companies are still feeling the backwash from the record breaking losses of £156m, at the last count, which Lloyd's of London, the insurance market, is facing from its involvement in computer leasing.

Last year was not a good year for the computer leasing industry in the UK. Bad investment decisions taken by some companies, combined with new product announcements by IBM threw the industry out of balance.

This was *exemplified* by the problems experienced by Lloyd's.

Most computers are leased under an operating lease arrangement. An operating lease is a service providmed on equipment where there is an established leasing and second-hand market. It may be attractive when a company requires a machine for a relatively short period because of the anticipated development of more advanced machinery.

The computer leasing concern arranges for a lessor to participate in the leasing of computers or can deal in and lease equipment itself. The lessor collects a payment from each lessee and the sum total of all of the *premiums* collected should be sufficient to cover the cost of the losses arising from the unrecovered value of obselete machines.

In the mid to late seventies computer leasing companies found a way in which to cover themselves against the potential obsolescence of the computers. Lloyd's offered a policy which gave cover on the difference between the monthly rentals and lower payments should a lease be terminated and the computer leased again for less money.

According to United Leasing, a leading UK computer leasing company, the Lloyd's policy began to go wrong when other leasing companies who had previously relied on equity finance to fund residual value shortfalls (and whom in most cases come to the limit of their investments in IBM'se 370 series computers) were offered another opportunity of equity finance without incurring any appreciable risk.

The policy effectively gave the computer leasing companies additional collateral to write huge amounts of business which they had previously declined to participate in.

It allowed policyholders to assume residual values on computers which were wholly unrealistic given the potential rapid change of computer technology.

The IBM announced its new ranges together with a price cut the claims—over 14,000 of—them—poured into Lloyd's.

Before the claims—mainly from the U.S.—hit Lloyd's the computer leasing concerns using the policy had had a field day. Busines which was patently imprudent was concluded, for with the benefit of the Lloyd's policy rates could be undercut.

Itel Corporation of the U.S., the troubled leasing concern, is expected to produce around $200m of claims for the Lloyd's market although a deal involving the transfer of cash and assets to Lloyd's could reduce the final total.

Meanwhile the rapid rate of computer technology—and the Lloyd's experience—has concentrated the minds of potential independent lessors wonderfully.

Plans for a single exam system by MICHAEL DIXON, Education Correspondent

Return of the failed mark at 16-plus

NEVER BEFORE have the prospects of the nation's young people been more dependent on their success or failure in public examinations. Of these, the fundamental test is taken by the great majority of pupils at the age of 16-plus, when they reach the end of the 11-year period of compulsory schooling.

Success, usually equated with pass-grades in at least five subjects at this level is increasingly required for entry to training for skilled work of most kinds. Success at 16-plus also opens the path to higher examinations such as the Advanced levels of the General Certificate of Education taken at 18-plus, and the universities' and polytechnics' degree exams which lie three or four years beyond. Higher certificates such as two A-level passes or a degree are increasingly required by professional bodies and employing organisations for entry to well-regarded careers.

Two developments probably underlie the growing use of essentially academic exams as the prime means of selecting people for jobs, few of which require academic skills.

One is the delegation of recruitment to specialist personnel departments. Wishing to avoid the expense of applying their own procedures of selection to large numbers of job applicants, these departments find bureaucratic rules based on examination results a handy device for swiftly reducing initial applications to a convenient number.

But the proportion of people available for recruitment at 16- and 18-plus has been reduced by the other development—the expansion of student capacity in universities, polytechnics and colleges. The general response of personnel departments has been to raise their educational "cut-offs" accordingly, recruiting only graduates for posts formerly open to A-level school-leavers, and so on. As student capacity grew, colleges also took over much of the work training formerly done by employing concerns, and since colleges require success at 16-plus for entry to their courses, this cut-off has been increasingly used in determining the entry to skilled jobs at the craftsman level.

By thus making examination passes the national career-currency, employers have led parents to attribute overwhelming importance to the public examinations. Indeed, no other educational issue arouses such strong and widespread public concern—as was demonstrated last week by the interest in the Government's proposed changes to the 16-plus exams in England and Wales. While using the currency, however, and generally knowing the "job-exchange rate" of the different pass grades, the public at large has little understanding of the workings of the examination system or of the assumptions on which its gradings are based.

Diverse

The exchange-rate effects of the proposed change at 16-plus, for example, are fairly clear. At present there are two kinds of examination at this stage.

One is the Ordinary levels of GCE, introduced in 1951, and rooted in examinations devised by Oxford and Cambridge Universities in 1858. These original tests were intended as a check on private schools, many of which, being free from official inspection, charged heavily for a poor education.

There are eight GCE examining boards, each setting and controlling its own Ordinary (as well as Advanced) levels in a wide variety of subjects. Unlike the preceding School Certificate exam, O levels may be sat and a certificate awarded in only a single subject, although most candidates sit five subjects.

Up to 1974, candidates were awarded one of three grades of pass—A, B and C—or a fail. But the then prevailing educational belief was that, while some 16-year-olds and by implication their teachers failed to come up to standard, it was bad for them to have the fact officially registered. So in 1975 grades D and E were added and have since been awarded along with certificates to virtually all candidates who previously would have failed. Employers, however, have generally continued to regard grades A-C as passes, and the rest as fails.

Being descended from examinations instituted in days when only a minority of children received secondary schooling, Ordinary levels were designed on the assumption that they would be entered only by the most academically able 20 to 25 per cent of pupils in the appropriate age range. But after 1945, when secondary schooling became compulsory for all children, the educational profession decided that there was also need for a 16-plus exam for pupils of rather lower levels of academic aptitude.

The result was the second existing exam at this level—the Certificate of Secondary Education, begun in 1965 and administered by 13 regional boards. The CSE's design assumes that it will not be entered by pupils capable of gaining the two higher "pass grades"—A and B—in Ordinary levels, nor by the least academically able 40 per cent of the nation's 16-year-olds. It is intended therefore for children ranking from about 20 per cent of the way down the full range of academic ability in the relevant age group, to 60 per cent of the way down.

Accordingly, CSE's top award of grade 1 is viewed (although not by many employers) as equivalent to pass-grade C in O levels. The most important theoretical point in the CSE hierarchy of awards, however, is the borderline between grades 4 and 5. This line is assumed to divide candidates whose academic ability is above the average for the relevant age group as a whole, from those in the below-average half. Thus CSE grades 2 to 4, although below an Ordinary-level pass, notionally acknowledge above-average ability in the subject concerned. Grade 5 denotes just below average.

The grade 6 signifies that CSE has never recognised the concept of failure. Legend has it that this grade would be awarded to candidates even if all they wrote on their test papers was their name, provided they did not make so many spelling mistakes as to render themselves unidentifiable.

Mock Ordinary level exams at a comprehensive school.

What the Government proposes to do six years hence is to merge Ordinary levels and CSE into an as yet unnamed single exam system for entry by the most academically able 60 per cent of the 16-plus age group. The plan is to cut the present 30,000 different examination syllabuses severely, curtailing their variety in line with the new policy of concentrating all state schools' teaching around a "national framework" of basic subjects.

The more compact and coherent range of syllabuses will be designed in consultation with the eight GCE and 13 CSE boards, which the Government hopes will also agree to merge into about five joint bodies. Each of these would control its own version of the replacement exam, with board-members from the present GCE sector retaining responsibility for the top three of a total of seven grades.

In every feasible subject, there would be at least one paper to be taken by all the entrants. But other papers would be set to cater for different levels of ability, and only candidates who chose the hardest of the papers would be eligible for the highest grades.

The first three awards—grades 1, 2 and 3—would have the same exchange-rate value as, respectively, A at Ordinary level; B at O level; and C at O level coupled with grade 1 of CSE. The new examination's grades 4, 5, and 6 would be equivalent to CSE's "above-average" awards of 2, 3, and 4. The replacement exam's seventh grade would compare with the "just-below-average" grade 5 of CSE. Apart from the renumbering, therefore, there would be virtually no change in the publicly visible exchange rates of the 16-plus gradings.

Where radical change is being attempted, however, is in the assumptions underlying the process of examining, of which the general public seems largely ignorant.

A clue to this change is the proposed examination's lack of a safety net equivalent to CSE grade 6. This means that the Government wants to restore the possibility of failure.

Its absence, coupled with the availability of the "easy" CSE, can produce negative results. Rather than push children who although capable of Ordinary levels are lazy, teachers have often let them be dragged down by their lethargy into mediocre grades of CSE. Moreover, since a certificate is sure to be awarded to every candidate in O levels as well as CSE, schools have entered for either examination many children below the level of academic ability for which the examination was designed.

At this point comes into play the method by which, in most mass-entry subjects, the different grades are awarded. This is not done by checking each paper against detailed criteria denoting different degrees of mastery of the subject. Instead, the candidates are ranked according to the scores put on their exam papers by the markers, and the ranking is then split into pre-determined percentage bands, each representing a different grade.

Devalued

In Ordinary levels the three pass-grades seem to be awarded to between 55 and 70 per cent of the entry. The CSE "above-average" grades of 4 upwards are awarded to five out of every six candidates because it is assumed that the least academically able 40 per cent of the age-group do not enter at all.

Given the entry of children below the intended levels of ability, the effect of the application of the statistical rules is to devalue the national career-currency. This probably explains why, although the number of examination successes has been increasing, employers have been complaining that the educational standards of 16-year-olds have fallen.

It is to halt this devaluation that the Government is attempting the most difficult of its changes at 16-plus. While the statistical "norm-referencing" device will still be used, the examining boards will be asked to make the examination grades partly dependent on candidates showing some specific levels of knowledge and skill in the subject concerned. As a result of the change, therefore, schools would know that entrants would not gain a decent grade or even a pass unless they had been taught to a particular standard.

In short, the new 16-plus is intended as a more definite test of the abilities, not only of school-children, but also of their teachers.

The crucial question here is to what extent the current school-teaching force in England and Wales is up to the intended test. At present, since the results of the examinations are primarily determined by how many children are entered, the answer simply cannot be known. But the widespread complaints by employers that 16-year-olds' standards have fallen, hardly encourage an optimistic forecast.

If the Government succeeds with its proposed change, the replacement examination might therefore expose severe flaws in the quality of the teaching force. These would surely call for urgent attention to teacher-training, which in turn would demand increased public spending. But that would doubtless be preferable to continuing present levels of expenditure in blissful ignorance of what value, if any, the nation's fundamental career-currency represents.

Letters to the Editor

Facts about steel

From Mr. G. Hansard

Sir,—In your leader "The facts about steel," (February 11), you state that British Steel Corporation's "present desperate condition can only be cured by an attack on overmanning and inefficient working practices." In other words, an outbreak of labour productivity is all that BSC needs in order to at least break even. In this, your leader writer is at one with the rest of the British Press, the National Economic Development Office, Sir Keith Joseph and BSC's top managers, though not with Mr. Bill Sirs. With the greatest of respect, it seems to me that "the fundamental facts at the bottom of the dispute" have eluded your leader writer, to say nothing of the others.

My analysis of BSC's performance is sharply at variance with the picture presented by the news media. I find that: market forces, and BSC's response to them, are the root cause of low and still declining performance: labour productivity is symptom rather than cause, an inadequate measure of overall performance, and not a key issue: and resources are being managed in such a way as to lock up excessive amounts of capital. Significant reductions in working capital are both possible and desirable, and could be used to fund forthcoming higher unit labour costs and redundancies.

BSC's expenditure on materials, energy and services—but not labour—is at a considerably higher rate than that of several major competitors in Europe, and has increased dramatically since 1975. But the increase has not been recovered in prices. It follows that BSC adds considerably less value than these competitors. Moreover, the amount of value added by BSC has fallen just as dramatically as the rise in expenditure on materials, energy and services.

Losses in each of the four years 1976-79 have been of the same order of magnitude as the increases in these expenditures, and hence the decreases in added value. This relationship between costs, prices and added value is far and away the most significant factor in BSC's economic performance.

Labour costs in terms of sales have been relatively stable since 1973, with the exception of 1976 when there was an upsurge, and compare favourably with those of most European producers. In terms of added value, there have been sharp increases in labour costs and decreases in labour productivity. These however, are due to market forces which have caused added value to decline.

An attack on overmanning in 1979, with the object of breaking even, would have entailed the sacking of 64,000 people, without taking redundancy payments into account. What this would have done to output and sales is anybody's guess.

By international standards, BSC turns over its assets very slowly, and uses excessive capital, as the table shows:

Per 100 units of total revenue	Inventories	Debtors	Working capital	Total assets
BSC	34	23	15	142
Estel	22	18	24	106
Krupp	17	8	11	84
Bethlehem Steel	10	9	9	79

In BSC's case, a reduction in working capital to 10 units is equivalent to a reduction of £172m in 1979.

Surely, what is at issue at BSC is nothing less than corporate productivity and the role played by market forces. Analysis, diagnosis and comment which ignores this is almost certain to be wide of the mark.

Gerald Hansard.
65, Linton Crescent, Leeds.

Scotch, beer and wine

From Mr. R. Capper

Sir,—The victory for fair play for whisky at the EEC court (February 28), against the French who currently tax it higher than their home produced brandy is extremely welcome, though it is doubtful if the French will comply with the ruling.

What is not so satisfactory is the judgment, deferred until the end of the year, concerning our own practice of taxing wine some six times greater than beer on a volume basis or some three times greater on an alcohol content basis.

No one should question the need for Government to raise revenue but to impose discriminatory duties is to influence the choice of the purchasing public. It also makes the wines at the lower end of the market extremely "bad buys" because of the high duty content in the bottle compared with quality wines.

Until reason prevails and a common duty structure, based upon the alcoholic content of ale drinks, is established in this country and also throughout the EEC there can be no true Common Market.

In case I should be accused of bias I write as a producer of both English hops and wine.

R. M. O. Capper
The Stocks Farm, Suckley, Worcestershire.

Small craft foundries

From Mr. F. Thompson

Sir,—The run down of the number of iron foundries which has taken place over the last 20 or 30 years has not only had the effect on the foundry industry with which we are all too familiar but has also produced a disturbing unhealthy state of affairs among purchasers of iron castings. All buyers of small quantities of castings have been trading in a buyers' market for this length of time; some will never have known anything different and the problems involved on the part of foundries in dealing with the attitudes and practices which this has cultivated will remain with the very small foundry for, I believe, some considerable time after the supply/demand equation has been brought back into balance.

I suppose any foundry is familiar with the widespread lack of knowledge of casting design on the part of users, the appalling technical ignorance (in 30 years I have never come across a buyer who has fully understood the British Standard Specification relating to iron castings), the frequent "shopping around" for lower prices, poor quality drawings, maintaining small sometimes even zero stocks of regularly-used castings, excessive delays in settling accounts and so on and above all this the omniscient attitude taken by a buyer when problems arise as they must and do because of one or more characteristics such as these.

It must be difficult enough for a larger foundry to deal with, for example, a dispute with a customer centering round a consignment of castings which, when the small print of the order relating to it is examined carefully, should have been made to a yard-of-rope-no-longer-than-two-feet type of specification but a small foundry simply has no option but to accept the buyer's decision in such a dispute whether just or not; it is too small to have any "clout" and any sum of money involved (in rejection of a batch of castings say) is more than likely to be too small to warrant taking legal advice.

We vet as best we can the competence and integrity of every potential customer but now and again we catch a crab and this invariably costs us dear in the end. And yet this is a gauntlet we are compelled to run because to survive it is essential that we take on new customers to replace those who go out of business or whose demand falls.

Maybe if and when a sellers' market develops buyers will eventually learn to deal on a fair footing with very small foundries but how long will this take and what can a very small foundry do about what is virtually a might-is-right situation in the meantime?

F. Thompson,
Leach and Thompson,
Chapel Foundry,
Dalton Lane,
Keighley, Yorks.

What capacity is needed?

From Dr. D. Hitchens

Sir,—Four measures are suggested by NEDO to shore up lame ducks in the craft foundry sector—a capital loan scheme, extension of the carry-back period for tax-rebates, relaxation of environmental control legislation and the "co-ordination" of foundry prices. Mr. Kilpatrick, chairman of the EDC, has been pressing most for his capital loan scheme (February 7, 14, 22) which he says has the magical property that, "Its monetary cost to the Exchequer would be nil, its real cost peanuts."

The trick is achieved if only those foundries that were efficient received the grants (because they would forego the capital allowance which they would otherwise offset against tax). The flaw in the argument is that cut-price investment would necessarily be open to all foundries which were able to put up three-fifths of the initial cost of the investment. If the foundry was subsequently unprofitable the full cost of the loan would fall on the taxpayer. As the report recognises—the scheme "has the advantage that the loan is paid back in depreciating currency" "out of profits."

Before any proposal for a subsidy of this kind is given serious consideration NEDO must provide a satisfactory answer to the question of how much craft foundry capacity we need, and why it should be protected. Until this is forthcoming the long-run rationalisation of that sector should be allowed to continue uninterrupted under the pressure of market forces.

(Dr.) D. Hitchens.
National Institute of Economic and Social Research,
2, Dean Trench Street,
Smith Square, SW1.

The merits of credit cards

From Mr. P. Kreamer

Sir,—Poor Mr. Jackson (February 28) seems to think our society is in danger of collapse if supermarkets start accepting credit cards.

What about the other side of the "credit" argument? Most of us receive our salaries a month in arrears while having to pay such things as rates in advance. Most housekeeping is paid in cash in advance of income.

And think of the advantage to the retailer! If it catches on no longer will we need armoured cars to haul great mountains of lolly from shop to bank tempting the thugs.

Why this attack on the friendly bank manager? Mine is extremely cautious with my money let alone his. He won't let me buy options. When I sell shares he collects the money on the dot on account day but refuses to pay for my purchases until physical delivery.

No, Mr. Jackson, the world isn't going to end tomorrow. You've been believing too many newspaper reports.

P. A. Kreamer.
39, Bell Lane,
Eton Wick,
Windsor,
Berks.

£3bn margin of error

From the Director,
Centre for Decision Making Studies, Tavistock Institute of Human Relations

Sir, — Your correspondents take up the centre position of the front page on February 28 to report on the Chancellor of the Exchequer's decision process for the coming Budget. The question centres on the problem of achieving his aim of a public sector borrowing requirement of £8bn. Later in the report they say that this figure "is subject to an average margin of error of nearly £3bn"! This figure is surely a totally unacceptable margin for guiding any sensible decision process, particularly in this highly sensitive area affecting the majority of the working population.

In the fields of social science with which I am familiar, margins of error of 2-5 per cent are often admitted, for instance in social surveys, but your correspondents' admission suggests an error that could exceed 35 per cent. One is left breathless at the thought that the Government's aim to achieve a PSBR of £8bn involves policies that affect the population's health, safety and employment opportunities, to mention only some of the serious social consequences of the decision process leading to a target figure stuck in quicksand.

(Dr.) Frank A. Heller.
The Tavistock Centre,
Belsize Lane, NW3

Today's Events

GENERAL

UK: Sir Derek Ezra, National Coal Board chairman, speaks at Coal Industry Society lunch, London.

Mr. Gordon Richardson, Governor of the Bank of England, presents annual prizes of London Chamber of Commerce, Mansion House.

Nominations close in Parliamentary by-election, Southend.

Police application to cancel Victoria Sporting Club gaming licence resumes, Caxton Hall.

Consumers Association launch 1980 Good Food Guide.

Leyland launch new truck range.

The Queen and Prince Philip visit Daily Mail Ideal Home Exhibition, Earl's Court.

National Mail Order Merchandise Show, Royal Horticultural Halls (until March 6).

Overseas: Financial Times', two-day conference opens on the world motor industry, Geneva.

Mr. Pierre Trudeau sworn in as Canadian Prime Minister, Ottawa.

President Valery Giscard d'Estaing of France in Bahrain at start of tour of Gulf States.

EEC Agriculture Council starts two-day meeting, Brussels.

EEC Fisheries Council meets, Brussels.

PARLIAMENTARY BUSINESS

House of Commons: Companies Bill, remaining stages, Road Traffic Accidents (Payments for Treatment) (England and Wales) Order.

House of Lords: British Aerospace Bill, second reading. Competition Bill, report.

Select Committees: Home Affairs. Subject: Deaths in police custody. Witnesses: Association of Police Officers, Metropolitan Police, Police Superintendents' Association. Room 8, 4.30 pm. Public Accounts. Subject: Scottish Development Agency Accounts 1977-78, 1978-79. Witnesses: Scottish Development Agency, Scottish Economic Planning Department. Room 16, 5.15 pm.

COMPANY MEETINGS

See Financial Diary on Page 6.

COMPANY RESULTS

Final dividends: Blagden and Noakes Holdings. George Ewer. Fisons. Royal Insurance. Interim dividends: Victor Products (Wallsend).

Lincroft Kilgour battles against textile recession

MR. TONY HOLLAND, chairman of Lincroft Kilgour, the cloth merchanting and menswear manufacturing group, points out in the annual report that the whole of the textile industry is in a state of recession but says nevertheless, "these downturns are cyclical and traditional and both divisions of the group are well used to coping with them by virtue of their flexibility."

The cloth merchanting division is fortunate to have its sales well spread around the world, although the present decline in sales to the Far East is a matter of concern, Mr. Holland adds.

The first weeks of the new financial year started slowly for the menswear manufacturing division, but in recent weeks a higher level of sales and production has been achieved. However, the well-being of this division essentially depends on its major *customers not increasing the percentage* of imports of products similar to those made by the division.

For the year ended September 30, 1979, group pre-tax profits were down from £875,170 to £434,696 on turnover of £14.47m against £13.57m. Trading profit was *£540,928 (£961,231)* with cloth merchanting contributing £439,552 (£470,324) and menswear manufacturing, £101,376 (£490,907).

The chairman says the shirt factory at Ballymena stepped up *production and made a considerably* higher contribution to group profits.

A CAA statement shows pre-tax profits reduced to £296,000 (£767,000) after adjustments for depreciation, £52,000 (£43,000) *cost of sales, £108,000 (£82,000)* and gearing, £21,000 (£17,000).

While the chairman fully agrees with the reasoning behind high interest rates in the battle against inflation, they are having an unfortunate effect on the group.

In any recession, *it is entirely* usual for the group, particularly in the cloth merchanting division, to turn stock into cash. Unfortunately, under the present system of corporation tax, this would lead to a clawback of stock appreciation relief which *would cost 52 per cent of any* funds so released, thus nullifying a large part of the benefit of destocking.

"In my view, the system of stock relief has served its purpose and should be replaced by corporation tax set at a realistically lower rate. This would encourage *industry* to cut its bank borrowings and perhaps the very act of destocking might help in the fight against inflation," says Mr. Holland.

The year-end balance sheet shows group fixed assets of £2.26m (£2.17m) and net current *assets of £2.49m (£2.5m).* The accounts also show a £22,500 ex gratia payment to a former director.

Meeting, 116, Pall Mall, S.W., March 25 at 12.30 p.m.

BOARD MEETINGS

The following companies have notified dates of Board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether dividends are interims or finals and the sub-divisions shown below are based mainly on last year's timetable.

TODAY

Interims—Beredin Rubber, Victor Products (Wallsend).

Finals—Blagdon and Noakes, George Ewer, Fisons, Investment Trust of Guernsey, Isle of Man Enterprises, Royal Insurance.

FUTURE DATES

Interims—

A.A.H.	Mar. 5
Coronation Syndicate	†Mar. 13
Ductile Steels	Mar. 11
H.T.V.	Mar. 13
Telefusion	Mar. 7

Finals—

Ault and Wiborg	Mar. 7
Banro Consolidated Industries	Mar. 19
Barclays Bank	Mar. 20
Farmer (S. W.)	Mar. 11
First Guernsey Securities Trust	Mar. 7
Greenfields Leisure	Mar. 6
Ibstock Johnson	Mar. 28
Montfort (Knitting Mills)	Mar. 12
Nu-Swift Industries	Mar. 13
Woodward (H.)	Mar. 12

† Corrected.

J. Jackson reasonably optimistic

WITH THE first four months trading figures showing an advance on last year, Mr. P. J. White, chairman of J. and H. B. Jackson, metal merchant, is reasonably optimistic for 1979-80.

Record profits were achieved in the forging division, he tells shareholders, due to a considerable increase in demand by the aircraft industry, and the trend has continued during the current year. "I shall be disappointed if a similar increase in profits is *not obtained this year.*"

However, Mr. White states that with the steel strike affecting iron and steel scrap deliveries, and with the probability of a decline in car demand, the company will be fortunate if the merchanting and distribution side maintains last year's record figures.

He adds that the engineers tools and distribution sector is holding up well and directors are at the point of purchasing another small company in this field.

In the engineering division the company started to install computer numerically controlled machines in the latter part of 1978-79, enabling it to take advantage of the increased demand for complex aircraft components.

This investment programme is continuing and should total around £0.5m by the end of the current year. Although the full benefit from this will not show in 1979-80 results, "I expect this division to hold its own despite the probable lower level of activity in engineering generally," the chairman says.

As reported on December 18, pre-tax profits for the year ended *September 30, 1979,* rose from £2.78m to £3.02m on turnover of £24.9m (£22.73m). The dividend is increased to 1.4p (1.0134p) per share.

Balance sheet shows fixed assets at £5.91m (£5.3m), and net current assets of £5.67m (£4.66m)—bank overdraft was £243,011 (nil).

Auditors say that provision for depreciation on freehold and long leasehold buildings has not been made as required by SSAP 12.

Accounts show the chairman's emoluments as £38,000 against £29,000 last year.

Meeting, Hotel Leofric, Coventry, March 25 at 3 pm.

BIDS AND DEALS

Maple attracts unwelcome offer

Maple and Co. (Holdings), the furniture retailer, has received an unwelcome bid approach from another retailing group. The offering company, which has not been named, is proposing a price of around 30p per share, which values Maple's ordinary capital at £8.4m. The shares closed on Friday at 25p.

The proposal comprises 21p in cash and about 9p in the shares of the offering company. The potential bidder would also offer 73p for each of the 263,504 4.55 per cent cumulative preference shares, conditional upon the offer for the ordinary shares becoming unconditional.

The directors of Maple together with their financial advisers Morgan Grenfell, said in a statement that they consider the proposals to be completely unsatisfactory and advise shareholders to take no action regarding their Maple shares.

After a run of losses in the mid-1970's, Maple returned to profit in its 1977-78 year and reported pre-tax profits of £1.03m for the 53 weeks to February 3, 1979. It recently announced the acquisition of a French company, Armena, for FFr 8.23m (£868,000 at present exchange rates).

SCOTTISH COMPANIES CHANGE TERMS OF TV REVENUE DEAL

Scottish Television and Grampian Television have agreed to a change in the share of total revenue from their joint selling company, Scottish Television and Grampian Sales.

The STV share changes from 82 per cent to 80 per cent while Grampian's share goes up from 18 per cent to 20 per cent.

The change in the share of the total income, which takes effect from January 1, will more truly reflect the number of ITV homes in each transmission area taking account of the greater proportional increase in the Grampian area in recent years.

The share of costs of operating the joint selling company has also been changed on a mutually agreed basis.

S. W. FARMER

The S. W. Farmer Group, structural steelwork and platework maker, has entered into a conditional agreement to acquire E. A. Roper and Co., a West Yorkshire private company, for a total consideration of £815,000.

The purchase will be satisfied by 200,000 ordinary shares and £500,000 guaranteed loan notes 1985, with interest four points below Midland Bank base rate.

Roper designs, makes and instals on-site foundry equipment for ferrous and non-ferrous foundries. Pre-tax profits for 1979 were £256,000 and book value of net tangible assets was £1.02m.

The directors say the acquisition will enable Farmer to expand into other markets and to offer specialist plant packages both in the UK and abroad.

NEIL & SPENCER ACQUIRES IBIS SUPPLIES

The assets and business of Ibis Supplies have been acquired by Neil and Spencer Limited, main subsidiary of Neil and Spencer Holdings, from the receiver.

The consideration is some £388,000 in cash represented by about £53,000 in plant and vehicles, and the balance in net current assets.

Ibis was a subsidiary of Ibis Kendal Holdings, of Kendal, Cumbria, and the failure of another subsidiary in the group forced the parent and all subsidiaries into receivership last October.

Ibis provides laundry and dry cleaning consumables to some 3,000 customers in the UK, and manufactures press clothing.

JOHN BROWN AND LEESONA CORP.

Following the offer by John Brown and Co. for Leesona Corporation, at the close of business on February 28 acceptances had been received in respect of some 1.42m Leesona common shares, representing approximately 70 per cent of the outstanding shares, including those covered by a warrant.

The offer remains open until March 14.

SHARE STAKES

Third Mile Investment Company—Antony Gibb has sold 58,750 shares. Saranac, a wholly owned subsidiary of Sempah (Holdings), has purchased 425,000 shares increasing Saranac's beneficial holding to 450,000 (17.71 per cent).

Gas and Oil Acreage—Yule Catto has acquired further 225,000 shares making holding 20.06 per cent.

FT Share Information

The following securities have been added to the Share Information Service appearing in the Financial Times:—

ACF Industries (Section: World Markets—New York). Sasol (Oil and Gas).

SPAIN

1979 High	1979 Low		Feb. 29 Price %
310	200	Banco Bilbao	227
353	204	Banco Central	256
232	198	Banco Exterior	213
286	200	Banco Hispano	226
174	135	Banco Ind. Cat.	135
213	158	Banco Madrid	158
348	203	Banco Santander	270
280	157	Banco Urquijo	175
285	202	Banco Vizcaya	238
261	195	Banco Zaragoza	207
220	100	Dragados	102
99	58	Espanola Zinc	60
67	49	Fecsa	57
78	23.5	Gal. Preciados	34
77.5	52.75	Hidrola	63.5
76	62	Iberduero	60.5
178	110	Petroleos	111.2
136	65	Petroliber	65
130	115	Sogefisa	115
82	53	Telefonica	55.5
69.7	55	Union Elect.	62.7

● NEWS ANALYSIS — P & O's HYDROFOIL

High speed entrant to the ferry market

BY WILLIAM HALL, SHIPPING CORRESPONDENT

People have been playing around with high speed hydrofoils for over a century. As long ago as 1898 an Italian, Enrico Forlanini, had built a boat *which travelled at over 50 mph.* By 1918 Alexander Graham Bell had designed a craft which sped across the waves at over 70 mph.

However, it is only very recently that hydrofoils have begun to be taken seriously by commercial operators. Last year, *Jetlink Ferries started operating* a 50 mph hydrofoil service between Brighton and Dieppe, and last week P & O Ferries started operating the first of its two £6½m Boeing jetfoils between the centre of London and Ostend.

Next month, the Irish government-owned *B+I Line will* start operating between Dublin and Liverpool and the Belgian Transport Ministry has announced in principle its decision to purchase two Boeing jetfoils for its Dover-Ostend route. These are expected to come into service next year.

In South America, a hydrofoil service between Buenos Aires and Montevideo will begin running later this year.

Short route hydrofoil services have been operating in Hong Kong and Japan for several years but it is only in the last couple of years that the numbers using hydrofoils, as opposed to conventional ferries, have started to mount up. According to the University of Washington there are 133 potentially good hydrofoil routes in the world.

There are two basic types of hydrofoil. The earliest types had *foils which pierced the water and* bounced across the waves and the second generating hydrofoil, now being marketed by Boeing under the name jetfoil, keeps its foils fully submerged and is unaffected by the motion of the sea.

The resultant trip is far smoother than a hovercraft or conventional ferry, and the advantage to passengers is that there is less risk of seasickness. Hydrofoils are highly manoeuvrable and can stop in less than 500 feet.

In 1975 Boeing, one of the leading hydrofoil manufacturers, calculated that its five jetfoils logged up 11.6m passenger miles and carried 323,000 passengers. By the end of last year the number of jetfoils in service had doubled to 10 and annual passenger miles travelled had reached 299.4m. Over 7.0m passengers used Boeing's hydrofoils alone.

P and O's venture into hydrofoil transport is not a gimmick. As long ago as 1970 it started talking to Boeing and in June 1977 it started a 15-month experimental service between London and Zeebrugge.

Using one 250 seater, it carried 60,000 passengers and picked up around 3¼ per cent of the Belgian/UK tourist traffic.

The service had its teething problems but P and O felt that it had proved that there was a market for a fast hydrofoil service.

With two hydrofoils in service by the summer, P & O will make up to six 3½ hour crossings a day. In a full year the hydrofoils, which can operate in all but the roughest weather, should make 1,826 crossings. This will give P & O a carrying capacity of just over 450,000 per annum. The company is aiming to win between 5 and 6 per cent of the Belgium/Luxembourg tourist market.

When it last operated the service it found that 82 per cent of its traffic originated on the Continent and half of this was holiday traffic. P & O believes that it has identified a wealthy market segment on the Continent that is quite happy to drive to Ostend and take a hydrofoil trip to London for a few days.

P & O hopes that its hydrofoil service will provide a very real threat to the airlines. Provided there are no air traffic controllers' strikes or other delays, a traveller can still go from the centre of London to Brussels slightly faster by air than by hydrofoil. However, the hydrofoil is often cheaper and P & O argues that it is more convenient. *The low season fare is £30 single* and there are cheap day returns of £37.

While P & O is keen to stimulate business passenger traffic from the UK, one of its main aims is to capture a share of the package tour market. American and Australian visitors, for example, are being given the option of going from the UK to the Continent by air or hydrofoil. P & O is aiming its marketing at those tourists that come to Britain without cars.

Not everyone is as convinced as P & O's senior management about the commercial viability of hydrofoils. European Ferries, Britain's biggest and most successful cross channel ferry operator, is convinced that hydrofoils are 20 years out of date.

It argues that the big disadvantage with hydrofoils is that they do not carry cars and as a result, a large segment of the tourist market is closed to them. Twenty years ago it would not have mattered, but now it does. However, both P & O and B + I on its Irish Sea route, are tapping large non-car passenger markets and the speed of the hydrofoil gives them a considerable edge.

The other problem with hydrofoils is that they burn a lot of fuel, and the recent sharp rise in oil prices could dent their competitiveness.

A hovercraft burns around 1,000 gallons of fuel an hour and can carry over 400 passengers and 60 cars. A jetfoil burns around 420 gallons of fuel an hour and carries 250 passengers. In addition, a hovercraft travels about 10-20 mph faster than a jetfoil.

For these reasons a number *of observers* are sceptical about the long-term commercial viability of hydrofoils and hovercraft. Hovercraft have cornered a third of the short sea cross chanel market. However, both British Rail's Seaspeed and Hoverlloyd are either losing money or just about breaking even.

The hovercraft have proved that there is a market for high-speed sea travel. What they have not proved yet, is whether the consumer is prepared to pay for the privilege. Seaspeed reckons that it can charge a 10-15 per cent premium over the conventional ferry operators and still fill its hovercraft.

JETFOIL FLEET EXPERIENCE

	Number of boats	Load factor %	Passengers m.
1975	5	55.4	0.3
1976	8	60.6	0.8
1977	8	62.8	1.7
1978	10	66.4	4.5
1979	10	69.3	7.1

هكذا من الأصل

INTERNATIONAL BONDS — BY FRANCIS GHILES AND PETER MONTAGNON

Softer days for hard currencies

THE STRENGTH of the U.S. dollar against all other major currencies, the rise of U.S. interest rates to new record levels and a slight gain in dollar bond prices combined to extend pressure on the Deutsche Mark and Swiss Franc foreign bond markets last week.

Investors no longer see justification in currency terms for the sharp interest rate differential between Deutsche Marks and Swiss Francs on one side and dollars on the other. The outlook for rising German and Swiss rates has thus made the two major hard currency sectors of the market very vulnerable.

Deutsche Mark bond prices fell less heavily last week than the week before. The increase in the German discount and Lombard rates on Thursday had the effect of stabilising prices in the secondary foreign bond market. The Bundesbank's decision to lift limits on advances made under its Lombard facility, which was also announced on Thursday, helped too. This should mean that call money rates do not rise much above the new Lombard rate level of 8½ per cent at which they were quoted on Friday. The pressure on longer term rates is thus reduced.

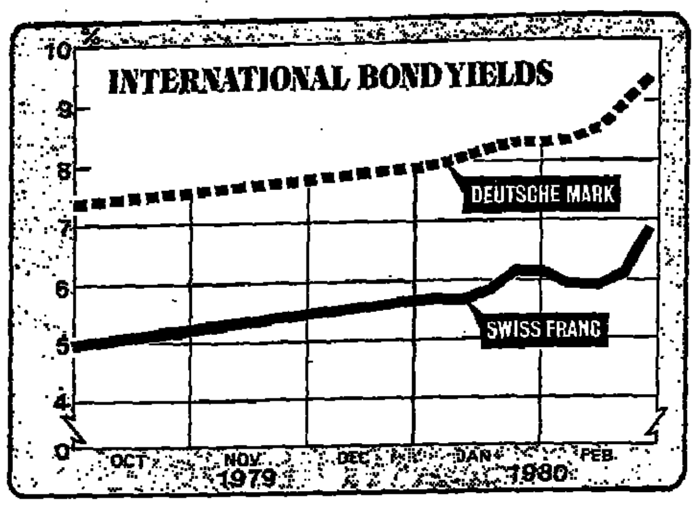
These considerations helped stabilise the domestic D-Mark bond market, and the Bundesbank were able to sell DM80m worth of paper on the last trading day of the week, whereas it had been forced to support the market quite heavily earlier on.

On Monday, the German Capital Markets Sub-Committee agreed to the smallest calendar of new foreign D-Mark issues in three months—DM580m. Three new bonds were launched last week, all of which carry coupons of 8¾ per cent and bear yields of between 8.75 and 8.79, the highest witnessed in this sector for three years. Meanwhile, the Commerzbank increased the coupon on the DM100m seven-year issue it is arranging for Nederlandse Gasunie by ¾ to 8½ per cent before pricing it at par. This increase did not prevent the secondary market from trading the issue at a discount of 2½ points from issue price.

The DM80m 10-year issue for the City of Oslo, which is managed by Deutsche Bank, includes a feature which, while common in the domestic D-Mark sector, is unusual for a foreign D-Mark bond. The issue price has been set from the start at 99¾, which, it is hoped, should attract good German domestic investor demand.

Despite the rise in German interest rates last week, the differential with dollar rates still stands at around 7½ per cent. German bankers say investors are still switching out of D-Marks into dollars, and they see no end to this drift.

The same phenomenon is affecting Swiss Franc bonds, and here the gap between U.S. and Swiss Franc interest rates is even wider. Swiss Franc foreign bonds posted falls of over four points last week, and this had the effect of pushing yields on outstanding issues up by two-thirds of a percentage point to around 6¾ per cent.



Coupons on two SwFr100m issues for Norges Kommunalbank and Oesterreichische Kontrollbank respectively had to be raised to 6 per cent, as the initial rates of 5¾ per cent and 5⅞ per cent proved out of line with the market.

Another new issue, for European Investment Bank, includes an interesting feature: after five years the coupon will be pegged at ½ per cent above the first mortgage rate in Switzerland. For the first five years the coupon will be fixed at 6 per cent.

In neither of the major hard currency sectors of the market were dealers convinced last Friday that they had seen the end of the decline in prices. German and Swiss new issue managers both said they had been facing increasing difficulty in setting terms for new loans.

As the Banque de France tightened money market rates for the second week running, French Franc Eurobonds posted falls of around 4½ points, pushing the average yield on outstanding issues well above 14 per cent. Meanwhile, sterling bonds also lost ground and now offer yields very close to 15 per cent.

Dollar-denominated issues, in sharp contrast, had a relatively uneventful week, although renewed rumours of credit and price controls in the U.S. last Friday left many dealers confused.

Prices of straight dollar issues showed gains of around ½ of a point on the week, but most activity was confined to swapping. As prices were much more stable than the week before, some bond houses were able to take full advantage of yield disparities for their clients. But all dealers agreed that virtually no new money was coming into the market.

Prices did, however, move quite strongly up and down on some days of the week. On Thursday and Friday, dealers noted some switching out of dollar Eurobonds into U.S. Treasury bonds, which have the attraction of being more liquid as an investment in today's market conditions. Treasury yields are also much closer than usual to Eurodollar bond yields although on average still slightly below.

The only new dollar issue last week was a $200m seven-year floating rate note issue for ENEL which is managed by Société Générale. The borrower is paying a coupon of ¼ per cent over six-month Libor with a minimum interest rate of 5¼ per cent.

Prices on the floating rate note sector were firm throughout the week, but activity in secondary market dealing tended to subside on Thursday and Friday. The coupon on the $25m FRN to 1989 for Bergen Bank was fixed at 17¼ per cent, the highest ever on a floating rate note. Other FRNs which are due to have their coupons readjusted soon showed gains on the week.

The two convertible bond issues which were signed last week, for Gearhart Finance NV and Community Psychiatric Centres were both increased in size, the first by $5m to $30m and the second by $3m to $15m, because of good investor demand.

CURRENT INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead manager	Offer yield %
U.S. DOLLARS							
‡§Gearhart Finance NV	30	1995	15	7½	100	S. G. Warburg	7.500
‡†SOFTE (g'teed STET)	50	1986	5.6	6¼†	100	Credit Lyonnais, Istituto Bancario San Paulo	6.606†
††Export Devel. Corp.	200	1985	5	*	*	Salomon Bros.	*
‡§Community Psychiatric Centers	15	1995	15	8½	100	Merrill Lynch	8.681
†BNP	50	1987	7	5¼Φ	100	National Bank of Abu Dhabi	5.319Φ
†C. ITOH (g'teed Dai-Ichi Kangyo)	50	1987	7	5¼Φ	100	Paribas	5.319Φ
†ENEL	200	1987	7	5¼Φ	100	Societe Generale	5.319Φ
D-MARKS							
‡Nederlands Gasunie	100	1987	5½	8½	100	Commerzbank	8.500
‡**Australia	150	1987	7	8	100	Deutsche Bank	8.000
‡**Westland-Utrecht Hypobk.	50	1985	5	8¾	100	WestLB	8.750
City of Oslo	80	1990	6½	8¾	99¾	Deutsche Bank	8.789
**Oesterreishische Kontrbk (g'teed Austria)	50	1985	5	8¾	100	DG Bank	8.750
SWISS FRANCS							
‡**Kingdom of Norway	100	1985	—	5½	100	UBS	5.500
‡World Bank	100	1990	—	5¾	99	UBS	5.885
‡Norges Kommunalbank (g'teed Norway)	100	1990	—	6	100	Banque Gutzwiller, Nordfinanz, Kredietbank (Suisse)	6,000
‡Oesterreichische Kontrby (g'teed Austria)	100	1990	—	6	100	SBC	6.000
EIB	90	1990	—	6	*	Soditic	*
LUXEMBOURG FRANCS							
ECSC	500	1990	8.6	10	99	Banque Generale du Lux	10.164
GUILDERS							
‡Nederlands Credietbank Finance NV	25	1985	5	10	99½	Nederlands Credietbank	10.132
YEN							
‡RENFE (g'teed Spain)	16	1990	—	8.3	99¼	Nikko Secs.	8.589
‡Finland	20	1992	—	8.4	99.7	Yamaichi Secs.	8.618
UNITS OF ACCOUNT							
‡Union Bank of Norway	18	1990	10	9½	99	Kredietbank (Lux.)	9.660
SPECIAL DRAWING RIGHTS							
‡Svenska Handelsbanken	15	1985	5	11	100	KIIC, Nordic Bank, Svenska Handelsbanken	11.000

* Not yet priced. ‡ Final terms. ** Placement. † Floating rate note. Φ Minimum. § Convertible.
†† Registered with U.S. Securities and Exchange Commission. ¶ Purchase Fund
Note: Yields are calculated on AIBD basis

US BONDS — By IAN HARGREAVES

Grasping at straws

THE HARD NEWS continues to be bad in the U.S. credit markets. Most big banks lifted their prime lending rates on Friday by another ½ point to a record 16½ per cent, and the money supply figures, published later the same day, were bad.

But the market is now so convinced that President Carter will include credit controls in the anti-inflation package now gestating in Washington that long bond prices continued to rise, albeit somewhat fitfully, following sweeping gains on Thursday when some corporate bonds surged by three points.

There was a similar pattern in long Treasury issues. The 11¾ per cent 30-year bond, for example, in spite of strong downward pressure early in the week, ended the week at 96¾, four points higher than it had traded on Monday. The yield on this issue dropped correspondingly from 12.7 per cent to 12.1 per cent.

The money supply figures, now published late on Friday rather than late on Thursday afternoon, and therefore of reduced impact in the market, had little discernible effect on Friday.

This was in spite of the fact M-1A, the basic measure, climbed by $1.1bn in the week ended February 20. This continues to be above the Federal Reserve Board's targets for money growth, and it now looks certain that for the month of February the Fed's interim targets will be missed by a substantial margin.

The other development on Friday—the prime rate—was fairly generally expected, and confirms that a good deal of settling is still required at the short end of the market.

There are many who doubt whether the kind of package politicaly possible in an election year will have any radical impact in inflation, but for the present a market which is still sufficiently volatile for bond offerings to be withdrawn or scaled down at the last minute is inclined to grasp at whatever straws are to hand.

CONSORTIUM BANK RESULTS — BY MICHAEL LAFFERTY

Some do better than others

"IF INTERNATIONAL banking margins have been so tight over the past year, why is it that several big consortium banks are now reporting large profit increases?" This is a question which seems to be cropping up a lot in the City at present. It comes in the wake of a 25 per cent increase in pre-tax profits at Nordic Bank, a 32 per cent increase at Libra, a 72 per cent jump at Eulabank, and a 30 per cent earnings boost at Intermex.

People tend to forget that pre-tax profits at Scandinavian Bank were up 13 per cent, and earnings by only 7 per cent. Other consortium banks, like Hungarian International and International Commercial, have reported profits which are unchanged, or slightly down. Orion Bank, under reorganised management, came out with a 16 per cent decline in pre-tax profits.

So the picture is far from uniform. If there is a trend, it is hidden away underneath the impressive-looking annual reports.

There are several reasons why the poor margins of Eurobanking might not come through in this year's figures. To start with, results for the year reflect the average margin on all lending outstanding. Very nice profits are still coming in from loans arranged before margins came under the severe pressure of the past year.

In addition to this individual banks have a vastly differing mix of business. Some, like the Nordic banks, are strongly placed in trade finance. Scandinavian Bank reports that treasury and foreign exchange business was an important contributor to profit in 1979. Company reported last year that foreign exchange dealing also made an important contribution to its results; Orion gets some benefit from its involvement in international mergers and acquisitions.

While the decline in spreads obviously takes time to become reflected in profits, there are also suggestions that banks may have been able to put a brighter picture on results through the front-loading of commitment fees. Not very much seems to be known about general practice in this area, like most aspects of bank accounting. However, one suggestion is that many banks front-load all such fees, while others are more prudent, and front-load only participation fees.

These things apart, banks have clearly been taking great care to cope with the effects of the decline in spreads. Nordic Bank reported last month that the average margin of its loan portfolio fell by only a small amount, while the average life of the portfolio was only up from 2¼ to 2½ years.

Hungarian International Bank reports that it has faced up to market conditions "with some stoicism," resisting the temptation to increase risks significantly in order to improve profitability." Here, loans of over one year still amount to only 17 per cent of the balance sheet.

FT INTERNATIONAL BOND SERVICE

U.S. DOLLAR STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Alcoa of Australia 10 89	60	77⅞	78⅜	+0⅛	+0⅛	14.44
Alex Howden XW 9½ 91	30	†70	72	0	+0⅛	14.95
Aquitaine Can 11¼ 85	30	†89	89¾	+1	+1¼	14.41
Australian Res. 9⅝ 84	30	84⅛	84⅝	+0⅞	+0⅞	14.61
Avco O/S Cap. 10⅝ 87	40	†73½	75	0	−1	16.60
Beneficial Fin. 9⅝ 87	100	78⅝	79⅛	+0½	+0⅝	14.57
CECA Grad Rate 12 86	100	89½	90¼	+1¼	0	14.40
CECA 11⅝ 90	50	83	83¾	+1⅞	+2⅛	14.93
Canadian Pacific 9¾ 89	50	75⅞	77½	+0½	+1⅛	14.42
Carter Hawley 9¾ 86	50	79⅞	80⅜	+1⅛	+1½	14.75
Comalco Inv. E. 10⅝ 91	40	77⅞	78	+0⅛	+0⅛	14.29
Continental Grp. 9⅝ 86	100	79⅛	79⅞	+0⅝	+0⅞	14.76
Dome Petroleum 10 94	50	70⅝	71⅛	+1⅛	+2⅛	14.99
Dominion Bridge 10⅝ 84	30	87	97½	+0⅛	+1⅛	14.39
EIB 11⅝ 92	80	81⅛	81¾	+0⅛	+0½	15.19
EIB 10⅝ 87	100	84	84½	+0½	+0⅝	14.14
EIB 10.15 99	100	73¼	73⅝	−0½	−0⅛	14.72
Exportfin 11⅛ 87	50	85½	86	0	+0⅛	14.66
Export Dv. Cpn. 9¾ 84	100	84⅜	84⅞	+0⅛	+0⅜	14.58
Export Dv. Cpn. 9⅞ 84	150	84⅝	85⅛	+0⅛	−0⅛	14.46
Finland 9⅝ 89	100	74⅛	74⅝	−0½	−1⅛	15.27
GTE Finance 9⅝ 89	55	76⅛	76⅝	+0⅝	+1⅛	14.49
GMAC 9¾ 86	100	79⅞	80⅜	+1	+1⅛	14.20
GMAC O/S Fin. 11 84	100	88⅞	89⅜	0	+0⅞	14.25
Gould Int. Fin. 9⅝ 85	50	83⅞	84⅜	+0½	+0⅞	14.42
ITT Antilles 9⅝ 89	75	74⅛	74⅞	+0⅛	+0⅜	14.69
Kennecott Int. 9½ 86	100	77	77½	+1⅛	+1⅛	15.42
Manitoba 9½ 89	75	76½	77	+0½	+0½	14.22
Michelin 10 94	125	71½	72	−0⅛	0	14.81
Nat. Des Telecm. 9⅞ 86	100	80⅝	81⅛	+0⅛	+0⅛	14.27
New Brunswick 9¾ 94	75	71⅞	72⅜	+0⅝	+1	14.53
Newfoundland 10 94	50	70⅝	71⅛	+1⅛	+0⅝	15.10
Norges Komm 9⅞ 99	100	70½	71⅛	+0⅛	−0⅛	14.82
Norway 9⅞ 84	150	84⅞	85⅜	+0⅛	−0⅜	14.46
Nova Scotia Pwr. 9¾ 89	50	76¼	76¾	+1	+1⅞	14.51
Occidental Fin. 10¼ 84	50	85⅛	85⅝	+0⅝	+1⅝	15.06
Orient Leasing 9½ 86	25	79	79½	−0⅛	−1⅛	14.72
Pennwalt O/S F. 9¾ 84	25	83⅞	84⅜	+0⅝	+1	15.02
Pepsico Cap 9¾ 84	100	85⅞	85⅝	+0⅝	+0⅛	14.20
Quebec Hydro 10 99	75	67⅛	67⅞	+0⅛	+0½	15.33
Sears Roebuck 9 82	150	90⅛	90⅝	+0⅝	+0⅝	15.01
Statoil 8⅞ 89	100	76⅞	77⅛	+0½	+1⅛	14.19
Sweden 9⅝ 89	100	77⅛	77⅞	+0½	+1	14.28
Sweden 9½ 86	200	79½	80	−0⅛	−1½	15.14
Sweden 9⅝ 84	100	85⅛	85⅝	+0⅛	+0½	14.36
Unilever NV 9¾ 87	100	77⅝	78⅛	+0⅝	+1⅛	14.23
Warner-Lambert 9 84	100	83⅝	84⅛	+0⅛	+0⅛	14.14

Average price changes. On day +0⅛ on week +0⅜

DEUTSCHE MARK STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
African Dev. Bk. 8 87	100	95⅛	96⅛	0	−0⅝	8.77
Asian Dev. Bk 7¾ 89	100	86⅛	86⅞	−0⅛	−1⅝	9.46
Barclays O'seas 6¾ 89	100	82⅞	83⅞	−0⅛	−2⅛	9.57
BFCE 7¾ 87	100	93	93¾	+0⅛	−2⅞	9.08
BFCE 8⅝ 95	100	91¾	92½	+0⅝	−1⅛	9.11
Brazil 8 87	150	87⅞	88⅝	−2	−4⅛	10.36
CECA 7 91	150	86½	87⅛	−0⅛	−0⅞	8.88
Council of Eur. 7¾ 89	100	89¼	90	+0⅞	+0⅛	8.95
Denmark 7⅞ 86	100	92⅝	93⅛	+0⅛	−1⅝	9.47
Denmark 8¾ 92	100	93⅛	93⅞	−0⅛	−2⅞	9.17
EEC 7⅞ 94	225	91	91¾	+0⅛	−0⅞	8.94
EIB 7½ 89	200	89⅞	90⅝	+0⅛	−2⅛	9.09
Finland Rep. of 8 86	150	93⅛	93⅞	−0⅞	−2½	9.32
Kobe, City of 7¾ 89	150	85⅝	86⅜	+0⅛	−2⅛	9.39
Neder. Gasunie 8 86	100	†98	99	+0⅛	+0½	8.29
New Zealand 7⅞ 87	200	89	89⅝	−0⅛	−1⅝	9.12
Nippon Tel & T 5½ 87	100	80⅛	81⅛	+0⅛	−1⅝	9.40
Norges Komm. 7⅝ 91	150	89½	90½	−0½	−1⅜	9.20
Norway 6⅝ 84	200	90⅞	90⅞	0	−0⅝	9.13
Norway 7⅝ 85	250	93⅞	94⅜	+0½	−1⅜	9.00
OKB 8 87	40	86½	87½	+1½	+0½	8.56
OKB 7⅞ 89	100	87½	88½	0	−3⅛	9.31
World Bank 7⅝ 91	400	88⅛	89½	+0⅛	−2½	9.33
World Bank 7⅞ 90	250	91⅞	92⅜	+0⅝	−0½	9.13

Average price changes. On day 0 on week −1⅛

SWISS FRANC STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Argentina 5½ 88	80	85¼	86¼	−2½	−6½	7.64
Asmar 5 88	60	87	88	−0½	−4½	6.95
Australia 3⅞ 88	250	84½	85	0	−3⅛	5.83
Bergen, City of 4⅝ 91	40	85	85½	−1	−4½	6.63
BNDE 5 88	75	81	81½	+0½	−2⅞	7.89
BMW Overseas 4⅝ 91	100	84⅞	85½	+0⅛	−6⅛	6.08
Caisse Nat. Tels. 4⅞ 89	100	86	86½	−3	−4⅛	6.35
Canada 3⅞ 89	300	84⅞	84½	−0⅛	−3⅞	5.90
Copenhagen 4½ 91	80	85	85⅝	0	−2⅛	6.35
Council of Eur. 5 89	100	87½	88	−0½	−4⅞	6.75
EIB 4⅞ 91	100	87⅛	87⅞	−0⅛	−0⅞	6.05
EIB 4⅝ 94	100	78⅝	79¼	−0⅛	−5⅛	6.68
Elet. de France 4⅝ 89	100	86	86½	−2	−5⅞	6.38
GZB 4⅝ 89	100	82	82½	−0⅛	−1⅝	6.81
Hdli 4½ 91	35	88	89	0	−3½	5.62
Int.-Amer. Dev. 4½ 89	100	80⅛	80⅞	−1⅛	−8¼	7.44
Jutland Tele. 5½ 90	80	93⅝	94½	−0⅝	−4½	6.31
Malaysia 5 89	80	88⅝	88⅝	0	−0⅛	7.05
Nippon Tel. & T. 4⅝ 89	100	88½	89	−0½	−3	5.81
Nordic Bank 5 88	45	88	88⅝	−2⅛	−7½	6.70
Norges Komm. 4⅝ 93	100	82⅛	82⅞	−1⅛	−4⅜	6.57
OKB 3⅞ 91	100	78	78⅝	−1⅛	−3⅛	6.66
OKB 4⅝ 91	100	82	82⅛	−0⅛	−2⅛	6.83
Oslo, City of 4⅝ 91	100	80⅛	81	−0⅛	−3⅞	6.80
Shikoku El. Pwr 4⅝ 89	100	87	87½	−0½	−7	6.60
Spain 4 91	100	82⅝	83⅛	−0⅛	−2⅛	6.17
Steweag 4⅝ 91	80	85½	86½	−2½	−4½	6.53
Voest-Alpine 4½ 88	80	83	83¾	−1½	−7⅛	7.28
World Bank 4⅝ 88	100	88⅛	88⅝	−2⅛	−5½	6.27
World Bank 4⅝ 85	100	85	86	−0⅝	−3½	6.45
World Bank 4⅝ 91	100	86	86½	−0½	−2⅞	6.32

Average price changes. On day −0⅞ on week −4⅛

YEN STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Australia 5.6 83	30	84⅛	85½	−1⅛	−1⅛	10.94
Australia 6½ 88	20	81⅛	82⅛	−0⅛	−0⅛	9.83
EIB 7⅜ 89	12	88⅝	89⅛	+0½	−0⅛	9.61
Finland 5.6 83	10	85⅝	86⅛	−0⅛	−0⅛	10.41
Finland 6.8 88	10	81⅛	82⅛	−0⅛	−0½	10.20

Average price changes. On day −0⅞ on week −1

OTHER STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Avco Fin. 10⅝ 86 C$	25	81	81⅛	+0⅛	+0⅛	15.04
Bell Canada 10⅝ 86 C$	60	85⅛	85⅝	+0⅛	−0⅛	14.28
Cr. Foncier 10⅝ 84 C$	30	85⅝	86⅛	−0⅛	−0⅛	14.81
Ex. Dev. Cpn. 10 84 C$	50	87½	88	+0⅛	−0⅛	14.01
Fst. Can. Inv. 10 84 C$	50	86⅝	87⅛	+0⅛	−0⅛	14.28
Hudson Bay 10½ 89 C$	60	80½	81	−0⅛	−1⅛	14.40
Quebec 10⅝ 86 C$	50	81⅝	82⅛	−0⅛	−0⅛	14.95
R. Bk. Canada 10 86 C$	40	83⅛	83⅝	+0⅛	−1⅛	14.17
R. Bk. Canada 10 94 C$	40	73⅞	74⅛	+0⅞	−0⅞	14.34
Copenhagen 8¾ 91 EUA	20	92½	93⅛	+0⅛	−2½	9.75
M. Bk. Dnmk. 9 91 EUA	25	93⅞	96⅛	0	−0½	9.80
SOFTE 8⅝ 89 EUA	40	85	86½	−0⅛	−1⅛	10.77
Algemene Bk. 8⅝ 84 Fl	75	92⅛	92⅝	−0⅛	−1⅛	10.37
Ned. Gasunie 8⅝ 84 Fl	50	91⅛	91⅝	−3⅛	−3	11.30
Ned. Middbk. 8⅝ 84 Fl	75	†93½	94	−0⅛	−0⅛	10.18
Norway 8⅝ 84 Fl	100	92⅛	92⅝	−0⅛	−1⅛	10.66
Norway 8⅝ 84 Fl	100	92⅛	82⅝	−0⅛	−1	10.39
Philips Lamps 8⅝ 84 Fl	75	92⅛	92⅝	−0⅛	−1⅛	10.70
Air France 11 84 FFr	120	90	91	−0½	−4	13.91
Euratom 9⅞ 87 FFr	150	78⅝	79⅛	−0⅛	−6⅞	14.57
Finland 11 84 FFr	80	89	90	+0⅛	−3	14.19
Finland 11½ 89 FFr	70	85⅝	86⅛	0	−5⅛	14.17
Gaz de France 11 84 FFr	150	89⅛	90⅛	+0⅛	−5⅛	13.93
IBM France 11⅞ 84 FFr	120	82	83	−0½	−2½	14.09
Renault 9⅝ 85 FFr	100	82⅛	83½	−0⅛	−4⅞	14.53
Saint-Gobain 9⅝ 86 FFr	130	80⅞	81⅞	−0⅛	−4⅛	14.47
Solvay et Cie 9⅝ 87 FFr	125	78⅞	80½	−0½	−3⅝	14.53
Total Oil 9⅝ 87 FFr	150	77	78⅛	−1⅞	−5⅞	14.67
Citicorp O/S 13½ 90 £	50	92	92⅛	−0⅛	−1	16.01
EIB 11½ 91 £	25	80	80⅛	−0⅛	−2⅛	16.21
Finance for Ind. 13 91 £	15	91⅛	91⅞	0	−2⅛	14.59
Fin. for Ind. 13½ 89 £	30	86⅛	87⅛	−0⅛	−1⅛	15.21
Gen. Elec. Co. 12½ 89 £	50	88⅞	89⅛	−0⅛	−1⅛	14.83
Indonesia 8⅝ 91 KD	7	†93	93½	0	0	9.74
Mitsubishi 7½ 84 KD	10	†95⅛	95⅞	0	0	8.71
Norges Kom. 7½ 89 KD	12	†93⅛	93⅞	0	0	8.52
Occidental 8⅝ 91 KD	7	†90⅛	90⅝	0	0	9.66
Akzo 9⅝ 87 LuxFr	500	92⅛	93⅛	−0⅛	−1⅛	10.58
Euratom 8 87 LuxFr	500	87⅛	88⅛	−0½	−1⅛	10.57
Euratom 9⅝ 89 LuxFr	500	99	100	0	−0⅛	9.83
EIB 9⅝ 88 LuxFr	600	97⅞	98⅞	−1⅛	−1⅞	10.05
Volvo 9⅝ 87 LuxFr	500	96⅛	97⅛	−1⅛	−2⅛	10.36

FLOATING RATE NOTES	Spread	Bid	Offer	C.dte	C.cpn	C.yld
Allied Irish Bk. 5½ 87	0⅝	97⅝	98⅛	2/7	15⅛	15.45
Banco di Roma Int. 6 87	0⅝	98⅞	99⅜	26/4	15⅝	15.89
Bank of Ireland 5⅝ 89	‡0⅛	97	97½	21/6	16⅛	16.58
Bank of Tokyo 5⅝ 89	‡0⅛	96⅞	97⅜	25/4	14.56	14.99
Barclays O/S Inv. 5 90	0⅛	96⅝	96⅞	13/6	14⅛	14.75
Bergen Bk. A/S 6 89	‡0⅛	97⅛	97⅝	29/5	17⅛	17.72
Bque. Indo Suez 5⅝ 89	0⅝	97½	98	11/7	14.89	15.03
Citicorp O/S F. 6 94	‡0⅛	98⅝	99⅛	8/3	14.44	14.60
Citicorp O/S F. 83	§‡0	99⅛	99⅝	23/5	16.08	16.14
Citicorp O/S F. 84	‡0	99⅛	99⅞	30/5	16.94	17.00
Co-operative Bk. 6 86	0⅛	97⅝	97⅞	15/5	15.06	15.43
Creditanstalt 5½ 91	§‡0⅛	97⅞	98⅛	14/3	14⅞	15.18
CNT 5⅝ 86	§0⅛	98⅛	99⅛	16/4	15.19	15.34
GZB 5⅞ 89	‡0⅛	97½	98	1/5	14⅝	14.96
Jugobanka 8 89	0⅞	92½	93½	23/5	16	17.20
Ind. Bank Japan 5⅝ 87	0⅛	97	97½	15/4	14⅛	14.65
LTCB Japan 5⅝ 86	0⅛	96⅝	97⅛	13/6	14⅛	14.71
LTCB Japan 5⅞ 89	0⅛	96⅞	96⅞	7/8	14.19	14.68
Mfrs. Han. O/S 5⅝ 94	‡0⅛	98⅛	98⅞	30/5	17⅛	17.38
Midland Intl. Fin. 5 89	0⅛	98½	99	20/6	16	15.19
Nacional Fin. 6⅝ 86	0⅛	96⅝	97⅛	25/7	14.69	15.16
Nat. West. 5⅝ 94	§0⅛	96⅝	97⅛	11/4	14.94	15.40
Nippon Credit 6½ 86	0⅛	96⅝	97⅛	12/7	14.44	14.90
Nippon Credit 5¼ 87	‡0⅛	97⅜	97⅞	6/5	14.69	15.04
Royal Bk. Scot. 6⅝ 94	§‡0⅛	97⅞	98⅛	11/4	14⅝	14.90
Soc. C. de Bque. 6½ 87	0⅛	96⅛	96⅞	3/4	13⅛	13.71
Sogenal 5⅝ 89	§0⅛	96⅛	96⅞	13/7	14.44	14.94
Sweden 8⅝ 91	‡0⅛	96⅝	97⅛	18/4	14.44	14.90
TVO Pwr. 9 91 (D-lock)	0⅛	96⅝	97⅛	24/5	15.31	15.81
Williams & Glyn 5⅝ 91	0⅛	97⅝	97⅞	14/3	13	13.32
Bq. E. d'Alg. 4⅝ 89 SF	0⅛	92	93	18/6	6.69	7.23

Average price changes... On day 0 on week 0

CONVERTIBLE BONDS	Cnv. date	Cnv. price	Bid	Offer	Chg. day	Prem
AGA Akt'bolag 7⅝ 89	10/79	145	118½	119½	+0½	−4.78
Ajinomoto 7⅝ 95	2/80	613	90⅛	91⅛	−0⅛	6.09
Alco Int. Fin. 9⅝ 94	1/80	40	92½	93½	0	21.49
Asahi Optical 7 94	11/79	605	77⅛	78⅛	−2⅛	2.40
Canon 6⅝ 94	8/79	570	98⅝	99⅝	−0½	4.08
Ciba-Geigy O/S F. 4 94	9/79	675	†88	89	+0½	6.52
Credit Suisse 4⅝ 93	10/79	1325	100⅝	102⅝	+0⅝	−3.04
Daiei Inc. 6⅝ 94	11/79	1020	89⅛	90⅛	−0⅛	22.76
Ensearch Fin. 9½ 94	7/80	30.25	111	112	−0⅛	10.61
LPC Internatnl. 8 89	9/79	23.33	†122½	123½	+0½	6.76
Meidensha Elec. 7 94	12/79	210	85⅞	86⅞	−0⅛	17.62
Mitsubishi Cp. 6½ 94	10/79	604	112⅛	114	−2⅛	4.09
Nippon Seiko 7⅝ 94	12/79	339	†99½	100½	+0½	4.03
Nitto Elec. Ind. 6 94	7/79	735	69	70⅛	0	4.95
Toshiba Cpn. 7⅝ 94	10/79	198	88⅞	89⅞	−3⅛	−1.33
Union Bk. Switz. 5 89	2/80	125	97⅝	99⅛	−0⅛	−5.05
Fujitsu 5 84 DM	7/79	475	93½	93⅞	−1½	22.02
Kansai Elec. 4 84 DM	4/79	1234	82½	83½	+0⅛	49.65
Tokyu Ld. Cp 4 86 DM	4/79	493	72⅛	73⅛	−0⅛	37.04
Uny Co. 6½ 85 DM	11/79	1071	87⅛	88⅛	+0⅛	30.54

BONDTRADE INDEX AND YIELD

	Medium term		Long term	
Feb. 29	86.89	11.93	71.54	13.29
Feb. 22	87.66	11.65	72.27	13.10
High '80	91.03	(2/1)	89.19	(2/1)
Low '80	86.88	(29/2)	71.54	(29/2)

EUROBOND TURNOVER (nominal value in $m)

	Cedel	Euroclear
U.S. $ bonds		
Last week	627.0	2,223.6
Previous week	612.5	1,930.4
Other bonds		
Last week	284.6	288.5
Previous week	188.0	299.3

* No information available—previous day's price.

† Only one market maker supplied a price.

STRAIGHT BONDS: The yield is the yield to redemption of the mid-price; the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change on week=Change over price a week earlier.

FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. C.dte=Date next coupon becomes effective. Spread=Margin above six-month offered rate (‡ three-month; § above mean rate) for U.S. dollars. C.cpn=The current coupon. C.yld=The current yield.

CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Chg. day=Change on day. Cnv. date=First date for conversion into shares. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

The list shows the 200 latest international bonds for which an adequate secondary market exists. The prices over the past week were supplied by: Arab Company for Trading Securities SAK; Kredietbank NV; Credit Commercial de France; Credit Lyonnais; Commerzbank AG; Deutsche Bank AG; Westdeutsche Landesbank Girozentrale; Banque Internationale Luxembourg; Kredietbank Luxembourg; Algemene Bank Nederland NV; Pierson, Heldring and Pierson; Credit Suisse/Swiss Credit Bank; Union Bank of Switzerland; Akroyd and Smithers; Bankers Trust International; Bondtrade; Credit Commercial de France (Secs.) London; Citicorp International Bank; Daiwa Europe NV; Deltec Trading Company; Dillon, Read Overseas Corporation; EBC; First Chicago; Goldman Sachs International Corporation; Hambros Bank; IBJ International; Kidder Peabody International; Merrill Lynch; Morgan Stanley International; Nesbitt Thomson; Salomon Brothers International; Samuel Montagu and Co.; Scandinavian Bank; Strauss Turnbull and Co.; Sumitomo Finance International; S. G. Warburg and Co.; Wood Gundy.

Closing prices on February 29

WORLD STOCK MARKETS

NEW YORK

CANADA

HOLLAND

JAPAN

ITALY

NORWAY

SWEDEN

SWITZERLAND

SINGAPORE

1979-80 High	Low	Feb. 29	Price $
4.78	2.26	Boustead	4.54
3.42	2.05	Cold Storage	3.30
5.90	3.86	DBS	5.90
6.40	4.92	Fraser & Neave	5.40
2.20	1.38	Haw Par.	2.20
2.50	1.51	Inchcape Bhd.	2.40
9.30	5.85	Malay Banking	9.30
7.90	5.10	Malay Brew.	5.20
8.80	5.82	OCBC	8.60
1.84	1.31	Pan Elect.	1.73
4.40	2.95	Sime Darby	4.25
10.40	5.30	Straits Trdg	10.40
4.42	3.14	UOB	4.32

SOUTH AFRICA

1979-80 High	Low	Feb. 29	Price Rand
3.30	2.05	Abercom	3.10
7.15	3.35	AE & CI	7.10
17.00	6.67	Anglo Am. Cp.	14.30
10.30	4.15	Barlow Rand	10.05
39.00	13.80	Buffels	38.75
4.40	1.70	CNA Investa	4.40
1.70	0.80	Currie Finance	1.60
11.75	8.07	De Beers	11.20
27.50	13.20	East Drie.	27.00
62.00	27.75	FS Geduld	62.00
92.00	26.90	Gold Fields SA	93
4.40	2.05	Highveld Steel	4.10
9.00	2.18	Huletts	7.20
33.50	10.70	Kloof	33.50
6.05	3.05	Nedbank	6.05
15.00	6.90	OK Bazaars	13.75
3.30	1.45	Protea Hldgs	3.08
6.90	3.35	Rembrandt	5.50
3.20	1.23	Rennies	3.08
6.55	3.10	Rust Plat	5.90
3.00	1.55	Sage Hldgs	2.60
3.18	1.20	SA Brews	3.05
6.40	2.55	SAPPI	6.40
13.50	5.00	Smith CG Sugar	11.25
1.90	0.73	Sorec	1.70
14.50	9.90	Tiger Oats	14.50
2.35	1.13	Unisec	2.10

Financial Rand US$1.04¼
(Discount of 15½%)

BRAZIL

1979-80 High	Low	Feb. 29	Price Cruz
1.62	0.78	Acesita	1.40
3.05	1.25	Banco Brazil	3.05
1.69	1.24	Banco Itau	1.52
2.80	0.85	Belgo. Min	2.45
3.40	1.40	Lojas Amer	1.40
2.77	1.21	Petrobras PP	2.67
2.00	1.04	Pirelli	1.96
4.00	1.67	Souza Cruz	3.40
6.40	3.70	Unip PE	5.80
5.70	1.05	Vale Rio Doce	5.70

Spanish prices, Page 14

NOTES:—Prices on this page are as quoted on the individual exchanges and are last traded prices. § Dealings suspended. xd Ex dividend. xc Ex scrip issue. xr Ex rights. xa Ex all.

FRANCE

AUSTRALIA

GERMANY

HONG KONG

AUSTRIA

BELGIUM/LUXEMBOURG

DENMARK

Indices

NEW YORK—DOW JONES

STANDARD AND POORS

N.Y.S.E. ALL COMMON

MONTREAL

	Feb. 29	Feb. 28	Feb. 27	Feb. 26	High	Low
Industrial	423.80	419.34	416.35	411.10	423.80 (29/2/80)	219.19 (2/1)
Combined	378.90	375.96	374.92	371.31	378.90 (29/2/80)	226.80 (2/1)
TORONTO Composite	2192.6	2177.6	2165.9	2149.8	2192.8 (29/2/80)	1315.8 (2/1)

NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Closing price	Change on day		Stocks traded	Closing price	Change on day
Amer. Tel. & Tel.	745,800	49¼	+1⅞	Mobil	410,800	79⅜	+⅛
IBM	650,500	63½	+⅛	Southern	385,900	11¼	+¼
Storage Technlgy.	586,300	19	+⅞	Gulf Oil	361,200	50	—
Duke Power	457,300	15	+⅛	Eastman Kodak	359,700	45⅛	+⅛
Texaco	414,500	40½	−⅛	Williams Co.	358,000	33½	−2⅛

Firestone fined over car crash

AKRON — Firestone Tire and Rubber Company said a Federal court jury in Baltimore has ordered it to pay $3.8m to a New York couple injured in a car accident. It was the largest penalty ever levied in a tyre suit against the company, Firestone said.

The jury made the award to Nicholas and Helen Daskarolis of Brooklyn, who contended that a 1976 car accident in which Daskarolis suffered permanent brain damage was caused by a defect in a Firestone Deluxe Champion Sup-R-Belt tyre, a bias-belted tyre still in production. According to court documents, the accident left Daskarolis unable to work and sexually impotent.

Firestone, whose attorneys are studying the verdict to determine whether the company will appeal, contended that the tyre was not defective.

AP-DJ

Building and Civil Engineering

£25m road contract in Trinidad

TEAMWORK Trinidad, a new associated company formed in Trinidad by Taylor Woodrow, has been awarded its first contract worth £25m by the Government of the Republic of Trinidad and Tobago, Ministry of Transport and Communications, Highways Division.

The project is for upgrading eight miles of the Princess Margaret Highway to dual carriageway standard, together with three interchanges, 15 underbridges and five footbridges.

Engineers for the project are Trinidad Engineering and Research (1978), C.E.P., and Freeman Fox and Partners.

In addition to the eight miles of main road—which links Chaguanas to the main east-west artery, the Churchill-Roosevelt highway—a similar length of linking side roads, extensive drainage and landscaping is involved. Considerable earthworks, including the building-up of embankments, will be necessary where the road crosses five miles of the Caroni swamp. Work is now under way, with completion due in summer, 1982.

£6.2m hospital job

PHASE ONE of the Ipswich Hospital Nucleus Development by the East Anglian Regional Health Authority is to be built by the local division of Fairclough Building under a £6.2m contract.

This consists of an extension to the existing hospital in Heath Road and will have wards for 308 beds, six operating theatres, accident and emergency departments, offices, and supporting facilities.

The building will be generally of two storeys with plant rooms at a higher level, and have a reinforced concrete frame and external cavity brickwork, lightweight internal concrete block partitions, in situ concrete floors and steel frame roof covered with aluminium cladding.

Work is due to start after Easter and should be completed by April, 1983.

The Nucleus Department at Ipswich is one of the first new District General Hospitals based on a cruciform layout capable of accommodating specialist departments. It has been designed by the regional architect at Cambridge; quantity surveyors are Davis Belfield and Everest (also of Cambridge), and structural engineering consultants are Charles Weiss and Partners of London.

New boiler house

A DESIGN and build project for a new boiler house complex to serve the Orgreave Works at Sheffield for British Steel (Chemicals) has gone to the combustion division of Vosper Thornycroft (UK), member of British Shipbuilders.

Valued at some £4.5m, the contract embraces the civil and building engineering work in addition to supply and installation of the boilers, firing equipment, pipework, tankage, electrics, and other necessary ancillary equipment.

The steam-raising plant consists of three stoker-fired watertube boilers and a fourth gas or liquid-fuel fired watertube boiler, with a combined steam output of some 200,000 lb per hour. Boilers are of the Gibson Wells straight-tube design and will be made by British Shipbuilders at its Wallsend factory.

Project is scheduled for completion in 1981 and the boilers are to be delivered in the middle of this year.

Hotel job for Lesser

WORK HAS now begun on the Crest Hotel, Gloucester, under a contract awarded to Lesser Design and Build estimated at being worth about £1.7m.

The new luxury hotel will have 100 bedrooms, seminar rooms, boardroom, public restaurant and bar, reception area and foyer.

It will be situated close to the M5 at the junction of the Barnwood by-pass and Barnet Way with a 130-metre access road, and parking space for 178 cars will be provided.

External finish will have facing brickwork with coloured mortar, and windows will have aluminium frames. The flat-roofed single and two-storey blocks will be screened from a nearby housing development by means of a 3.5-metre-high mound forming a feature of the landscaped areas.

Completion is due in March next year.

£7.6m Sir A. McAlpine awards

TWO CONTRACTS, with a total value of over £7.6m, have been won by Sir Alfred McAlpine and Son (Northern).

For British Nuclear Fuels, at Sellafield, Seascale, Cumbria, the company is undertaking the design and construction of a training centre, design services building, an exhibition building and an entrance lodge, all sited at the north end of the Windscale and Calder Works. Foundations, fencing, drainage and roadworks as well as mechanical and electrical installations, are included in the contract which is due to be completed in 18 months.

The second contract is from David Brown Gear Industries. This is worth over £2m and is for a single-storey complex to be built at Huddersfield. The site is at David Brown's premises in Howarth Lane, Lockwood, and the contract calls for construction of single-storey machine, assembly and development shops, test cells, external works and road re-alignment. Electrical and mechanical installations are also included in the contract.

White Young Consulting engineers, are responsible for the project which is due for completion in a year.

Improving production facilities

MAIN CONTRACTOR for a major modernisation scheme at the Speke, Liverpool, factory of Goodlass Wall and Company (maker of Valspar paints) is Petrocarbon Developments.

Valued at £7½m, the project is to improve production facilities for resins, oil and emulsion paints, warehousing for raw materials and finished product, as well as various utilities and amenities.

Petrocarbon completed a capital study and estimate for the paint company last year, and has now been appointed to handle detailed design, procurement and erection of the plant.

Work has started and is expected to last for two years.

£4m award in Hong Kong

AIR-CONDITIONING, ventilation and steam plant at the new Sha Tin teaching hospital in Eastern Hong Kong is to be installed by Drake and Scull (Hong Kong) under a £4m award.

The hospital, scheduled for completion in 1982, will have 1,400 beds. Total estimated building cost of the hospital, excluding medical equipment and furniture, is £38m.

£¾m piling work for West's

CONTRACTS worth £750,000 have been awarded to West's Piling, part of the WGI Group.

The largest, worth £120,000, for Burnley Borough Council, is for a sheltered housing development at Clifton Farm, Crow Wood Avenue. It involves the design and construction of reinforced concrete retaining walls with ground beams on 160 shell piles of varying diameter. They will be driven down 46 ft to carry loads of up to 70 tonnes.

At the Inveralmond Industrial Estate, Perth, the company is to drive 330 pre-cast reinforced concrete piles for an abattoir for FMC and at Portishead, near Bristol, 464 shell piles are to be driven for warehouse units on behalf of the British Rail Property Board, South West Region.

More than £2m for J. L. Eve

FOUR building contracts and a variety of small transmission line/tower contracts have been won by J. L. Eve Construction of Wimbledon.

The largest of the building contracts, valued at over £800,000, involves the construction of a new three storey office block extension and basement car park, for the PSA at Redhill, Surrey.

One of the other awards is for the construction of a block of old people's flats at Vereker Road, Fulham, for the London Borough of Hammersmith and Fulham.

A further phase of the rehabilitation programme at Brecknock Estate, London N19, has been obtained. The Brecknock estate work, for the London Borough of Islington, involves external and internal essential repairs to 44 flats.

Additional to other works carried out by the company for the Central Electricity Generating Board, is a contract gained for work in connection with a major sub-station in St. John's Wood, London.

Various other small contracts, amounting to £150,000 have been gained by the company's transmission division for special projects which involve work on the Severn Bridge, design and erection of steel towers in Western Samoa and erection of a 400 kV overhead line in the Didcot area of Berkshire.

LEGAL NOTICES

THE COMPANIES ACTS 1948 TO 1976
DIRECTLIGHT LIMITED

NOTICE IS HEREBY GIVEN, pursuant to section 293 of the Companies Act 1948, that a Meeting of the Creditors of the above-named Company will be held at Winchester House, 100 Old Broad Street, London, EC2, on Tuesday, the 18th day of March 1980, at 12 noon, for the purposes mentioned in sections 294 and 295 of the said Act.

Dated this 20th day of February 1980.
By Order of the Board,
J. HAYWOOD, Director.

THE COMPANIES ACTS 1948 TO 1976
CREDITIME LIMITED

NOTICE IS HEREBY GIVEN, pursuant to section 293 of the Companies Act 1948, that a Meeting of the Creditors of the above-named Company will be held at Winchester House, 100 Old Broad Street, London, EC2, on Tuesday the 18th day of March 1980, at 12 noon, for the purposes mentioned in sections 294 and 295 of the said Act.

Dated this 20th day of February 1980.
By Order of the Board,
J. HAYWOOD, Director.

Cartwright wins £6m awards

WITH ITS latest contracts, worth a total of over £6m, the Joseph Cartwright Group is looking forward to a busy first half year.

Its Bath-based building company, Hayward and Wooster is undertaking a completion contract at Willsbridge, near Bristol. Under this contract, valued at £2.35m the company is to complete the construction of 170 dwellings for the Jephson Second Housing Association. Also in Bristol work has started on 41 flats for Northavon District Council (£490,000).

To house students at the Lackham College of Agriculture near Chippenham the company is to build a £122,000 hostel block in reconstructed stone for the Wiltshire County Council, while in Bath work has just started on a £142,000 Department of the Environment contract for the upgrading of an office block at Foxhill. Refurbishment costing £128,000 is to be carried out to the Baptist Church at Widcombe.

In Newport, Gwent, the company is to construct 28 flats for the elderly together with warden's house under a £337,000 contract with the Anchor Housing Association. Also in South Wales work is now under way for Property Services Agency on the construction of an aircrew room at R.A.F. St. Athan (£125,000).

Other newly awarded contracts are in the north where Leeds based J. Cartwright Construction is to carry out two housing improvement schemes for the Bradford Metropolitan District Council. One is at Scholemoor Estate, Bradford, where 94 homes will be upgraded (£800,000) and the other at the Bradford Moor Estate where improvements will be carried out on 52 homes (£470,000). Also in Bradford a measured term contract for work on telephone exchanges awarded by the PSA is expected to amount to £80,000 per annum.

Under a contract valued at £250,000 the company is to carry out an extensive modernisation programme below stage at the Grand Theatre, Leeds.

On the industrial building front work has started on the construction of a 50,000 sq ft factory and office building at Kirkstall, Leeds. The project, which will provide Jowett and Sowry with new premises, is estimated to cost £800,000 including the extensive site preparation works and fitting out.

At Normanton, Yorkshire, work is under way on a project valued at £130,000 to provide industrial premises for Continental Pressing Technics.

All the expertise in one basket

TWO PROFESSIONAL practices in two entirely different spheres have married together to produce what is believed to be the first merger of its kind in this country. Result of an alliance between accountants Armitage Norton and engineering consultants Ewbank is the formation of one broadly based consultancy, Armitage Norton Consultants, P.O. Box B134, Britannia Buildings, St. George's Square, Huddersfield, West Yorkshire (0484 21433).

Both companies have contracted to combine their existing and independent management consultancy operations into one, which will offer a stronger, wider range of skills to their parent companies' existing clients.

Armitage and Norton has a total staff of 500 and is traditional provider of services to manufacturing industries in the North of England, while at Ewbank's Brighton headquarters, 600 people are involved in the fields of power generation and transmission, desalination, oil and gas production facilities, pipelines and building services.

In the UK, the newly formed consultancy will concentrate on three areas: practical guidance to companies with profitability or liquidity problems; services to the smaller or medium-sized industrial concern which may not have previously engaged consultants; and expert advice in the fast developing fields of microprocessors and micro computers.

What makes the merger unusual—apart from the two companies' totally different areas of operation—is that the one, shared-powerhouse of activity will be constantly available to common clients of both the accountants and engineering consultants.

Now, a whole series of options exists at the Huddersfield generator which must surely open up even more successful and wider-spread opportunities for both companies at home and overseas.

DEBORAH PICKERING

Eliminates the downdraught

COMBINED flue terminal and ventilator, designed and guaranteed to eliminate downdraught, is being manufactured by John Henning (Engineering) and marketed by Aerocowl Marketing both of Northern Ireland.

The Aerocowl way developed in five years of research and proved in independent tests conducted at the Polytechnic Innovation and Resource Centre, Northern Ireland. The unit is based on an aerofoil mounted in an expansion chamber above a venturi system.

In addition to eliminating downdraughts and assisting with summer ventilation, the Aerocowl also reduces fuel costs, prevent rain entry to the flue, and balances pressure in the flue when the door of a room is opened.

It works equally well on all types of fireplace or central heating systems—enclosed fires with back boiler, underfloor draught fires, open and canopied fireplaces with box grates, solid fuel ranges, and gas, oil or solid fuel central heating systems. It makes for quieter ignition of oil and gas burners, and also considerably reduces the need for flue sweeping.

Made of aluminium with steel fixing legs, the lightweight unit can be fitted very simply within two minutes. Fixing is achieved by turning a wing-nut on the top of the unit, causing the three self-centring fixing legs to expand outwards and engage firmly against the inside of the chimney pot. The unit can be installed in a similar manner even when no chimney pot is fitted.

Only two sizes of Aerocowl are needed to cover all sizes of flue from 4 inch to 10 inch diameter.

In operation, the Aerocowl is held at a predetermined height above the chimney orifice, setting up an airflow stabilising system which compensates any negative pressure caused by the cowl. Due to this stabilising system, only the air available at the fireplace orifice is used, preventing accentuation of any draught problems in the house and eliminating excessive fuel burning.

All winds are converted to a transverse laminar airflow and drawdown suction which occurs when winds blow along parallel with the long axis of the dwelling is countered by a simultaneous increase in the negative pressure. This negative flue pressure is always greater than any negative pressure created in the room. This ensures that even under extreme conditions, the chimney continues to draw.

Aerocowl Marketing, 288 Newtownwards Road, Belfast, Northern Ireland. 0232 50237.

Drainage work

MAIN drainage in the villages of Melchbourne, Shelton and Yielden is to be carried out for North Bedfordshire Borough Council by A. Street and Company under a £322,000 contract. For the same council the company is also to undertake work in connection with the Felmersham and Sharnbrook rising main at a cost of £179,000.

Surveyors get work in Iraq

QUANTITY SURVEYORS D. G. Jones and Partners have been appointed by the State Organisation for Tourism of Iraq to provide a post-contract service on six hotels. Construction work has commenced, although completion is not scheduled until 1982.

Each of the hotels will have conference facilities, a shopping arcade, tennis, swimming pool, bowling alley, discotheque and nightclub. The hotels involved are the 300-room 22-storey Sheraton, 380-room Meridian, 310-room 17-storey Babylon, and 282-room Novotel in Baghdad, and a Sheraton and Novotel in Basrah.

Further hotel development is planned and the State Organisation for Tourism is currently inviting prequalifications from international contractors for another 5-star hotel in Mosul.

Pipelines to be laid

MANUFACTURE and laying of 1.25km of 202mm internal diameter flexible submarine pipe is to be undertaken for the Anglian Water Authority by NKT Copenhagen. This pipe is to form a sea outfall for sewage from Aldeburgh, Suffolk and it to be laid in one day in April by NKT's pipelaying vessel.

After the Aldeburgh work the vessel will go south to the Solent where it is to lay about 7.8 km of pipeline from near Southampton to Gunard Bay, Isle of Wight for the Southern Water Authority. The pipeline will be used to supply fresh water from the mainland.

Value of the two contracts is over £1m.

IN BRIEF

- Ridett Building Contractors is to build 26 flats and warden's accommodation at Whitepit Lane, Newport (£490,000) for Isle of Wight Housing Association and 36 two-bedroomed flats at Carter Avenue, Shanklin (£515,000) for South Wight Borough Council.
- Miller Buckley Construction has been awarded a £392,926 contract by North Thames Gas for building a pipeyard and stores at Uxbridge, Middlesex.

PETER RIDDELL ON THE NATIONAL INSTITUTE OF ECONOMICS AND SOCIAL RESEARCH QUARTERLY REVIEW

Stress on scrapping 'won't regenerate profitability'

THE PRESENT balance of Government policy is tilted too much towards the destruction of old products and obsolete capacity and away from the creation of new capacity to produce new products, the National Institute of Economic and Social Research warns in its latest quarterly review published this morning.

"If nothing is done, there is a danger that the UK will drift gradually but irresistibly into selective import controls, imposed piecemeal to give relief where lack of competitiveness hurts most, and not to regenerate profitability for firms with the best prospects for expansion in the future."

The institute states that it has "long held the view that, without incomes policy, fiscal and monetary instruments alone are insufficient to achieve the conventional goals of economic policy and clearly, if the entire thrust of policy were towards reducing inflation as quickly as possible, other goals would have to be foregone."

"There is no guarantee that a lower exchange rate would rectify the balance between destruction and creation in industry but, in reviewing the potential scope of fiscal policy, a factor to be taken into account is that some expansion might be a positive contribution towards preventing things getting even worse."

The review repeats the call for a reform of wage bargaining and some kind of social contract as on the Continent. It then examines the scope for *an expansion in public sector* borrowing to try to offset some of the adverse effects the monetary measures to control inflation are having on output and employment without making attainment of the monetary targets impossible.

"If the Public Sector Borrowing Requirement must remain with roughly its same ratio of Gross Domestic Product in market prices, and *sterling M3* may only grow at 9 per cent during the fiscal year 1980-81, the answer would appear to be a tax cut of £2bn compared with the forecast (which already assumes indexation of direct and indirect taxes).

"If the borrowing/GDP ratio were allowed to rise marginally in 1980-81 but to return to its 1979-80 ratio by 1981-82 and sterling M3 were allowed to grow at the upper limit of its 7 to 11 per cent target range, then a tax cut of £3bn would be possible. This would enable the Government to proceed half way towards its target basis rate of income tax of 25 per *cent and to avoid the indexation* of duties or permit a reduction in the rate of Value Added Tax."

The institute notes that the classic objections to fiscal expansion have always been first its effect on inflation and second its effect on the balance of payments. The institute points out that a cut in indirect taxes would actually reduce the rate of inflation, but questions whether the likely size of current account deficit—probably smaller than last year—can be viewed as imposing a restraint on reflation at present. Other industrialised countries are expecting to increase their deficit this year. Further, reflation will help to put some downward pressure on the exchange rate.

The latest review also contains an article on monetary policy by Mr. David Savage of the institute's staff. He argues that "there is no simple contemporaneous relation between changes in monetary aggregates and the rate of inflation, nor any such simple relation between the change in broad money aggregates and the level of real activity in the economy."

Secondly, he argues that "there are no simple effective routes to the *control of the* money supply which will be substantially free of the difficulties which have been experienced in the use of sterling M3 targets and, in particular, concludes that monetary base control or other methods relating to high-powered money may not offer a particularly improved solution." He also maintains there is no rigid relation between public sector borrowing and the money supply.

A further special article by Mr. Christopher Allsopp and Mr. Vijay Joshi of Oxford University surveys the main alternative strategies for the UK economy put forward by the institute itself, by the London Business School, and by the Cambridge Economic Policy Group.

After surveying the varying analyses and proposals the authors conclude that "there is agreement on the need for improvements on the supply side of the economy. The contentious question is whether expansionary policies are needed as well."

National Institute Economic Review, number 91. Annual subscription £14.00 in UK, from National Institute, 2, Dean Trench Street, London SW1P 3HE.

Stagnation, unemployment and inflation to continue

CONTINUED STAGNATION in the economy, rising unemployment, a high rate of inflation and a big current account deficit are forecast for the UK this year by the institute.

The recent rise in oil prices has resulted in a slightly more pessimistic analysis compared with last November's review; the main change is that living standards are expected to remain more buoyant than before and that the current account deficit will be smaller.

The main assumptions are that the exchange rate will not alter over the next two years and that both direct and indirect taxes are increased in line with inflation.

The key features are a decline in investment by a further 4 per cent in 1980 following a similar decline last year. Although investment is forecast to drop by a further 1 per cent in 1981, it should turn upwards by the second half of the year.

The decline in fixed investment this year is matched by destocking. This is, however, expected to be much smaller than in 1975, because the recent upturn has been less than in 1973 and the recession is likely to be not as severe.

Both import and export volumes are expected to rise faster than the general level of expenditure with increases of 2 per cent this year and 4 per cent in 1981 and little effect on the current balance.

Public authorities' current expenditure is expected to fall through this year as a result of the cuts which have been announced already and then to remain unchanged in real terms during 1981.

Real personal disposable incomes are projected to rise by 2.8 per cent this year after a 5.4 per cent jump in 1979 and the savings ratio is expected to decline from 19.2 per cent in the fourth quarter of 1979 to 15.4 per cent in the same period of this year and to 14.7 per cent by the end of 1981.

The annual average savings ratio is projected to drop from about 16.5 per cent in 1979 and 1980 to 15.5 per cent next year. This reflects a greater stability in the value of assets as the rate of consumer price inflation is expected to fall in and after the second half of 1980—down from an average of 15.8 per cent this year to 13 per cent in 1981.

Consumer spending is projected to rise 2.7 per cent this year and by 3 per cent in 1981 when it will be a major contributor to the recovery in overall activity.

Decline

Total output, as measured by real Gross Domestic Product, is forecast to decline by 0.5 per cent in 1980 before recovering by 2 per cent next year.

The rise in output is, however, unlikely to be sufficient to halt the rise in unemployment with the adult seasonally adjusted total for Great Britain projected to rise to nearly 1.6m at the end of this year and to more than 1.8m by the end of 1981. Even this high figure is on the expectation that productivity growth will continue to be sluggish.

The current account deficit is projected to decline from £2.4bn last year to £1.8bn this year and to £1.7bn in 1981.

Public sector borrowing is expected to rise from £8.7bn in the current financial year to £9bn in 1980-81 before slipping back to £8.5bn in 1981-82.

The demand for bank lending is expected to decline in line with the drop in the level of activity so that the Treasury Bill Rate should fall from its present level but only to about 15 per cent by the end of this year, implying a Minimum Lending Rate of 15½ per cent.

The review also examines the effect of various Budgetary measures on the economy. It notes, among other points, that changes in public expenditure are more effective in changing real activity in the economy than are similar alterations in public revenue.

A special article on the prospects for industrial production suggests that over the next two years the growth in the share of personal consumption in final demand is expected to permit the consumer industries (such as food, drink and tobacco, clothing, furniture and publishing and the repairs side of construction) to grow at rates similar to those of the past.

In contrast, those industries which depend heavily on exports or on investment will have falling output in 1980 with little rise in 1981.

The institute expects manufacturing and total industrial output (excluding oil) to fall by 1 to 1½ per cent this year and to rise by roughly 1 per cent in 1981.

Worst affected sectors are likely to be ferrous metals—down 16 per cent this year before a rise of 1½ per cent in 1981—and shipbuilding, down a tenth in both years.

Mechanical engineering production is projected to fall by 6 per cent this year and by 2 per cent in 1981.

SUMMARY OF FORECASTS

(November projections in brackets)

	Real GDP (per cent change year/year)	Real personal disposable income (per cent change year/year)	Unemployment* (fourth quarter, m)	Money supply (per cent change in sterling M3, fiscal years)	Consumer prices (per cent change, year/year)	Current account balance (year, £ bn)	Public sector borrowing requirement fiscal year, £ bn)
1979 Estimate	0.6 (0.4)	5.4 (5.4)	1.23 (1.21)	10 (11)	11.9 (12.0)	−2.4 (−3.1)	8.7 (8.6)
1980	−0.5 (0.2)	2.8 (1.9)	1.58 (1.42)	9 (9)	15.8 (16.3)	−1.8 (−3.3)	9.0 (9.0)
1981	2.0 (1.9)	1.7 (1.6)	1.84 (1.59)	9 (9)	13.0 (13.4)	−1.7 (−2.5)	8.5 (8.3)

* Great Britain, wholly unemployed, excluding school-leavers.

Source: *National Institute review*

Prospects for world economy 'gloomy'

THE NEXT 12 months will be a period of slow growth, rapid inflation, and massive current account deficit for most of the industrial world, according to the special article on the world economy in the latest institute review.

Aggregate output in the 24 countries of the Organisation for Economic Co-operation and Development area is projected to rise by 1.2 per cent this year following an increase of 3.2 per cent last year.

At the same time, the annual rate of consumer price inflation is projected to rise from 10.1 per cent last year to 11.5 per cent in 1980.

"While the prospect might be somewhat different had different domestic policies been adopted, the gloomy outlook stems essentially from the huge increase in the price of oil, which in little more than a year has doubled."

● Between 1978 and 1980 oil exporters will increase their surplus on current account by $125bn to an estimated $139bn while the OECD countries' balance will swing over the two years from a surplus of $11bn to a deficit of $70bn.

"Over the two years together (though not individually) this is a bigger swing than took place in 1974, even at constant prices and in relation to OECD countries' output (which has increased by about one sixth in real terms since 1974)."

Because oil exporters' imports will increase, world trade may not suffer very severely. The institute projects an increase in volume of 4½ per cent for total trade and of 6 per cent for trade in manufactured goods.

In 1981, the institute expects the growth of OECD output to recover to at least 2½ per cent, with consumer prices rising by less than 10 per cent and the volume of world trade possibly accelerating a little.

CURRENT ACCOUNT BALANCES

(U.S.$bn)

	1978 (estimate)	1979 (estimate)	1980 (forecast)
Total OECD	+11	−32	−70
Other developed	—	+1	+3
Oil exporters	+14	+69	+139
Non-oil developing	−25	−40	−73
Centrally planned	—	+2	+1

CBI forecasts tighter squeeze on industry

BY PETER RIDDELL, ECONOMICS CORRESPONDENT

INDUSTRY FACES a tightening financial squeeze this year, say detailed forecasts by Confederation of British Industry economists, published today in the CBI Economic Situation Report.

Mainly as a result of weak profits, high interest payments, an increase in North Sea profits going abroad and with investment high, though falling, the financial deficit for industrial and commercial companies is projected to rise from over £5½bn last year to nearly £7bn in 1980.

This will probably be met by increases in bank borrowing of more than £5bn in the current and next financial years.

Other features of the forecast are a 2 per cent drop in total output, as measured by real gross domestic product, this year and a rise of about 400,000 in adult unemployment up to 1.7m, seasonally adjusted, by the fourth quarter. A smaller fall in output but more unemployment are expected in 1981.

A large reduction is forecast in current account deficit, mainly from North Sea oil, with inflation rate declining in the second half.

TUC'S 1980 ECONOMIC REVIEW

Expansionary Budget 'needed to reverse monetarist failure'

BY ALAN PIKE, LABOUR CORRESPONDENT

AN EXPANSIONARY Budget is needed to begin to reverse the slump and halt the rise in unemployment, the TUC argues in its 1980 Economic Review published yesterday.

Surveys of economic prospects, public expenditure and industrial policy lead up to TUC demands for an alternative strategy to the Government's "single-minded monetarist policy" which, argues the review, is no answer to the problems of the United Kingdom economy. "Indeed, this policy has resulted in a failure to meet any of the four basic objectives of economic policy—*full employment*, economic growth, stable prices and a balance of overseas payments."

Government action, says the TUC, has added 8½ per cent to price increases from mid-1979 to mid-1980. Public spending policies were adding to deflationary trends, and the Government's attempts to cut public borrowing would be self-defeating and merely deepen the slump. The Government should plan public spending against a medium-term plan for sufficient growth to bring the economy back to full employment, rather than against an arbitrary figure.

The review concludes that in a modern industrial economy with a large public sector, multinational companies, powerful financial institutions and a strong and free trade union movement "the idea that competition and the free play of market forces can provide the means for allocating resources is little short of naive."

There should, says the TUC, be a Budget announcing pension and child benefit increases in November by more than the rise in the cost of living. Cuts in public services such as education and health should be reversed. A comprehensive system of capital taxation should be retained, and, in addition to an increase in tax thresholds in line with inflation, the reduced rate of tax should be cut to 20 per cent and the band extended by £250.

On industrial policy, the review calls for selective and temporary import controls and policies which would increase, not reduce, finance for the Manpower Services Commission and National Enterprise Board, industrial and regional assistance and investment by nationalised industries.

OECD hints at value of winning trade union pay co-operation

A TACTFULLY-WORDED hint *that the Government should* talk to the trade unions about the scope for wage increases is given this morning by the Organisation for Economic Co-operation and Development in its annual survey of the UK economy.

The OECD stresses that the key to an improvement in the UK's recent "disappointing" performance lies in a reduction in the rate of inflation.

The report says that the full effects of the Government approach of strict monetary control will not immediately become apparent, and it will be some time before a balanced judgment can be made.

"The extent and duration of tight policies will obviously depend on how long it will take for more reasonable attitudes toward pay formation to develop.

"Developments in the current pay round and most forecasts suggest that progress in reducing substantially the underlying rate of inflation will take time.

"Given the strong inflationary pressures, the Government's policy of firm control of monetary growth with a con*sistent fiscal policy is essential.*

"Although much depends on the circumstances and past history of individual countries, some experience elsewhere suggests that discussion between the authorities and the social partners may be able to help promote better understanding of the scope for wage increases and thus improve the basis for more satisfactory price and growth performance."

The report notes that the UK is fortunately placed in having its own oil resources, and has a large scope for higher productivity.

"But it is likely that the growth potential will remain largely unexploited unless the growth in nominal wages is moderated, until the competitiveness and responsiveness of the economy improve and a greater share of national income is shifted to profits and investment, thus creating the conditions for a dynamic process of non-inflationary growth and a sustainable increase in living standards."

OECD OUTLOOK FOR 1980

Percentage volume changes at annual rates

	1980	Second half 1980 on second half 1979
Consumer spending	½	1½
Fixed investment	−6¼	−8¼
Exports	3¼	¼
Imports	−¼	−2½
Gross Domestic Product	−2	−2½
Consumer prices	16¼	15¼

Source: OECD Economic Survey on UK

Conclusions

These conclusions follow a gloomy assessment of recent performance and generally cheerless forecasts for 1980. OECD points both to recurrent inflationary pressures and to inhibitions on performance from a "lack of steadiness in management of the economy."

The forecasts reflect the general downgrading in OECD expectations about world prospects since its last half-yearly Outlook in December, after the further rise in oil prices.

The projections assume that *there will be no significant* change in UK policy.

The fiscal stance will be restrictive, with public spending in real terms falling somewhat faster than planned to make place for the expected high pay settlements in the public sector.

However, because of the forecast decline in output, the built-in fiscal stabilisers would tend to raise public-sector borrowing to about £10½bn, which would be broadly the same in real terms as the level expected in 1979-80.

This assumes a rise in personal income tax allowances in line with inflation, but no account is taken of any similar rise, or valorisation, of customs and excise duties.

Monetary policy is also expected to be restrictive, with growth of sterling M3 at the upper end of the official target range. A small fall in interest rates, reflecting weaker credit demand, is built into the forecasts, but at the end of 1980 they will probably remain at unusually high levels.

Largely because of a substan*tial improvement in real foreign* balance (an unchanged exchange rate is assumed) the trade account is expected to move from a $6¾bn (about £3bn) deficit in 1979 to near balance this year.

The increase in North Sea oil production between 1979 and 1980 is estimated at about $4bn (£1¾bn) and will account for more than half the improvement in the current external account over this period.

The deterioration in the invisible account is also expected to come to a halt in 1980, giving a small current-account surplus for the year as a whole.

"Developments this year will be largely influenced by the level of pay settlements, an area in which there is much uncertainty at present."

The forecasts reflect the technical assumption that the growth of average earnings to the end of 1980 will be broadly the same, about 17 per cent, as the underlying rate in the year to the end of 1979.

This, combined with a fall in output, should lead to an acceleration in rate of growth of unit labour costs to 19 per cent.

This will further compress company profits; excluding North Sea oil, the latter's share in gross domestic product is expected to decline from 8¼ per cent in 1978 to less than 7 per cent in 1979, and to nearly 6 per cent in 1980.

The previous lowest was 6.3 per cent in 1975.

The underlying rate of growth of consumer prices, which excludes the mechanical effects of the July, 1979, increase in indirect taxes, is expected to stabilise at about 15¼ per cent in 1980, about two percentage *points more than the underlying* rate of growth through 1979.

Including the indirect tax rises, the year-on-year rise in consumer prices is expected to average 16¼ per cent this year.

The growth of real disposable income is forecast at ½ per cent this year, compared with 5 per cent in 1979.

Partly for precautionary reasons related to expected growth in unemployment, and also with the aim of limiting the decline in the real value of liquid and semi-liquid assets, the personal savings ratio is *expected to rise slightly further* this year.

Accordingly, consumer spending is expected to remain at about last year's level.

All the main components of private investment are expected to decline this year.

Gross domestic product is forecast to decline by about 2 per cent, 2½ per cent if North Sea oil is excluded.

On the assumption that as in the last two years the labour force will continue rising at less than ½ per cent annual rate, the unemployment rate should *reach about 7 per cent* at the end of 1980, roughly 1.7m, compared with 5¼ per cent at the end of last year.

OECD Economic Survey of the United Kingdom, available from the Stationery Office.

PETER RIDDELL ON THE LONDON BUSINESS SCHOOL'S ECONOMIC OUTLOOK

Two-figure inflation for two years

THE INFLATION rate will not be back below 10 per cent for at least two years, though it should start to slow down from the middle of this year. In the process, output will suffer and real Gross Domestic Product will be no higher at the end of *next year than at the end of* last year.

This is the central theme of the new Economic Outlook from the London Business School's Centre for Economic Forecasting. It is directed by Dr. Alan Budd, who took over at the end of last year from Professor Terry Burns, the Treasury's chief economic adviser.

The Outlook suggests there will be a painful and fairly gradual process of adjustment as both the UK and the rest of the world try to shake off the latest upsurge in inflation. Only North Sea oil throws any light on the gloomy picture.

The Business School gives a warning that the prospects for the next four years will be considerably worse than for the last four. The annual growth of real Gross Domestic Product is projected to decline from 2.3 per cent in 1976-79 to 0.9 per cent in 1980-83. On the same comparison, average consumption, growth is expected to slacken from 2.1 to 0.6 per cent, while the current account deficit will rise from an average of £600m to £1.9bn.

One result is an expected rise *in unemployment from* an annual average total in Great Britain of 1.24m last year to 1.48m this year, 1.82m in 1981, 2.04m in 1982 and 2.14m in 1983.

The combination of recession, fairly rapid inflation, a high exchange rate and a tight monetary squeeze is likely to mean a sharp squeeze on profits, particularly in the non-oil sector.

Profits—after excluding both stock appreciation and North Sea oil operations—are forecast to decline by 59.1 per cent this year *compared with last, and to* drop by a further 9.3 per cent in 1981. The projected total for next year of £3.9bn compares with £11.24bn in 1978.

The forecasts are slightly gloomier than those produced last November. They predict a drop in Gross Domestic Product of 1.7 per cent this year, compared with the previous forecast of a 1.1 per cent drop. Similarly, there has been an upwards revision of the inflation *forecast. The main change since* November has been another oil price increase.

The Business School says the biggest question mark over the short-term future of the UK economy concerns the value of sterling. The pound is considerably stronger than would be *suggested by traditional fore*casting relationships, with UK relative wholesale prices some 30 per cent above trend.

"While some of the pound's recent strength is undoubtedly justified on a long-term basis by North Sea oil, it seems likely that the exceptional uncertainty about the future of oil prices has pushed sterling above its sustainable long-run equilibrium." As there are no prospects for current account surpluses for the next four years, the strength of sterling seems to depend entirely on capital inflows.

"*Unless there are some early* signs of a sustained improvement in UK inflation, it is difficult to believe that these inflows will continue or indeed that the funds will be left in this country."

The Business School notes the possibility both of a weakening of spot crude oil prices and of a fall in UK interest rates. Consequently, the Outlook says the effective exchange rate will start to decline this year and to drop by 5.9 per cent next year, by 4.7 per cent in 1982 and by 3.7 per cent in 1983.

World industrial output is projected to drop by about 1.7 per cent this year, with only a small pick-up next year before a strong recovery in 1982 and 1983. World trade, which grew by more than 6 per cent last year, is expected to rise by 1 per *cent this year and slightly less* next year.

In the UK, the main short-term influence on earnings has been the accelerating rate of price inflation. In the longer-term, the Business School believes the forces of world competition will bring UK prices—and hence earnings—into line with those of competitors.

"Unless the process is assisted by a rapid fall in the exchange rate (which is not *anticipated) the adjustment will* be protracted and will have severe short-term costs in terms of unemployment and low profits. Provided that the growth of the money supply is kept below 10 per cent a year, the Business School forecasts that the increase in earnings *will slow down from the second* half of the year."

The growth of real incomes has slowed considerably as prices have caught up with earnings. Real disposable income is forecast to drop slightly this year and next with little growth thereafter. Little *change is expected in the sav*ings ratio this year as the effects of a fall in real income are offset by a higher inflation rate. Consumption is projected to drop slightly, though from next year onwards the slow down in the inflation rate is expected to reduce the savings ratio, and consumer spending is projected to rise by 1½ to 2 per cent a year.

The fall in consumption this year is expected to produce a much slower growth in imports than last year. Although exports are expected to rise by 4½ per cent between last year and this, virtually no growth is forecast this year. This is because of the distorted pattern last year, with a low first half exports and a higher level in the second half.

Monetary growth is expected to slacken this year; the main impact of the sharp reduction in public borrowing in calendar 1980 on calendar 1979 (in con*trast to the different pattern* between financial years) should be felt on interest rates.

The Outlook also contains a special article by Mr. Bill Robinson and Mr. Peter Warburton on the management of currency holdings during the floating rate period. This considers the risks and rewards which have been associated with various foreign exchange exposure policies.

The study, which is by definition based on an examination of past movements which could be reversed, suggests that in the period when the world was learning to cope with floating exchange rates, international capital markets were not perfectly efficient. As long as inefficiencies remain, the study suggests that the money manager would be wise to minimise his exposure in foreign currencies offering low *or negative "real" rates of* interest, and maximise exposure in currencies offering the highest positive real rate of interest.

Economic Outlook 1979-83, volume 4 number 5. February 1980. Annual subscription rate in UK £48. Available from Gower Publishing, 1, Westmead, Farnborough, Hampshire GU14 7RU.

LONDON BUSINESS SCHOOL FORECASTS

(November projections in brackets)

Percentage annual change in real terms

	1980	1981	1982	1983
Consumer spending	−0.7 (0.1)	−0.2 (1.3)	1.5 (1.3)	1.7 (1.5)
Private fixed investment (excluding dwellings)	−4.1 (−4.5)	−1.8 (−4.2)	2.9 (2.2)	4.2 (10.7)
Exports	4.5 (4.2)	−0.2 (1.5)	2.2 (2.7)	3.3 (2.5)
Imports	0.8 (−1.1)	−1.1 (0.4)	2.3 (3.2)	3.8 (4.1)
Gross Domestic Product	−1.7 (−1.1)	0.4 (0.8)	2.4 (1.7)	2.5 (2.7)
Consumer prices	17.7 (15.5)	14.1 (11.2)	9.0 (8.1)	7.7 (6.0)
Money supply (M3)	7.8 (8.2)	8.8 (7.2)	9.4 (7.8)	9.6 (5.6)
Current account (£bn)	−1.7 (−0.46)	−1.71 (−0.26)	−1.76 (−0.84)	−2.81 (−2.26)

Source: *London Business School Economic Outlook*

No scope for easing budget fiscal policy

THERE IS NO scope for a relaxation of fiscal policy in the Budget, Dr. Alan Budd and Mr. Geoffrey Dicks of the London Business School argue in their viewpoint article in the new Economic Outlook.

The authors say the monetary target for 1980-81 should be a growth of sterling M3, the broadly defined money supply, of about 8 per cent. This would require public sector borrowing of about £10bn in 1980-81 if output falls by 2 per cent.

Such an amount would be roughly 4½ per cent of Gross Domestic Product at market prices which is slightly higher than in 1979-80. Borrowing can be higher if the recession is more severe than expected.

The article concludes that the "choices facing the Chancellor are so painful that there is probably little risk that the Government will insist, for some misguided reason of prestige, on reducing borrowing below this year's level. But it must also avoid the temptation to believe that it can risk an expansionary Budget in the hope that the financial arithmetic will somehow come right."

The Business School's central forecast is for a fall in output of 1.7 per cent in 1980, producing borrowing of about £10.7bn in 1980-81 and money supply growth of about 9 per cent. This is based on the assumption that both personal income tax allowances and specific duties are increased in line with inflation and that the UK contribution to the EEC will be cut by £500m. But this is before taking account of any further spending cuts.

Since borrowing should be close to £10bn if monetary growth is to be held down, the Budget should be neutral as far as fiscal policy is concerned after adjusting for inflation. The Government may therefore have to forego the complete adjustment of personal tax allowances.

The authors say there is a case for restricting the degree of indexation to 13 per cent rather than 17 per cent since the rise in prices due to the increase in Value Added Tax was taken into account in the June Budget.

There is a good case for reducing employers' national insurance contributions but there would have to be savings elsewhere. Without a more radical approach to public spending, the Government is unlikely to be able to make significant further cuts for 1980-81.

Dr. Budd and Mr. Dicks re-state the case for a medium-term financial plan related to public sector borrowing and *the growth of the money supply.* This is seen as "an essential step towards a stable environment in which economic agents can operate without fears of a sudden recurrence of rapid inflation."

The authors also examine two *recent arguments on the issue.* The first is that there is no connection between public sector borrowing and the growth of the money supply and the second is that nominal borrowing provides a misleading picture of the Government's fiscal stance.

They maintain that the first argument is mistaken and that the second argument is largely irrelevant at a time when the Government's prime objective is to reduce the rate of inflation.

FT Monthly Survey of Business Opinion

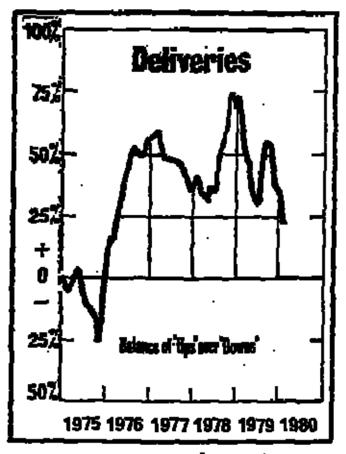
GENERAL OUTLOOK

Confidence still at low level

CONFIDENCE ABOUT general business prospects remains at a very low level. There was no change last month in the index of optimism about the general business situation, which remains at its lowest for about three-and-a-half years.

Of the three groups of industry interviewed for the survey, the engineering sector was generally less pessimistic than it had been when last questioned in October, while the chemical and oil group, together with shipping and transport companies were more gloomy.

The percentage of companies saying that they are "fairly pessimistic" continues to rise and now stands at 20 per cent against only 7 per cent last November.



The steel strike and the general downturn in economic activity were the main factors depressing confidence. Competition from abroad as well as high interest rates made for general pessimism in the chemicals and oil sector, although one company claimed that North Sea oil production was a bright spot.

The index of optimism about the UK economy continued to decline.

GENERAL BUSINESS SITUATION

Are you more or less optimistic about *your Company's prospects than you were* four months ago:—	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
More optimistic	24	24	22	24	16	13	37
Neutral	36	37	38	39	30	34	29
Less optimistic	40	39	40	37	54	53	34

EXPORT PROSPECTS (Weighted by exports)

Over the next 12 months exports will be:—	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Higher	48	52	59	61	28	46	45
Same	30	29	29	23	36	28	23
Lower	22	18	11	15	36	26	32
Don't know	1	1	1	1	—	—	—

ORDERS AND OUTPUT

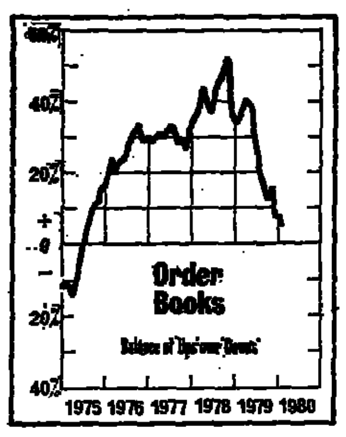
Renewed slump in orders

THE INDICES measuring new orders, order levels and recent deliveries all showed declines.

Engineering companies cited the strong pound and the increase in oil prices as factors depressing deliveries.

Both this sector and the chemical and oil group also reported lower incoming orders. The general economic downturn, high interest rates, lower spending by local authorities and a fall in Iranian business were all blamed for the reduction.

The chemical and oil sectors pointed to a shortage of feed stock chemicals, and gas prices were still thought to be too low. Lower demand for shipping and transport was caused by general economic conditions; but there was some offsetting increase in charter activity.



The index of export prospects fell back, with the drop particularly severe for the engineering and transport connected sectors, which have higher exports in relation to their market capitalisations.

Engineering companies mentioned the strong pound, price competition overseas, and delivery problems due to the engineering and now the steel strikes as main factors depressing exports.

The index for the median expected increase in turnover over the next 12 months dropped back to 4.8 per cent from 4.9 per cent.

NEW ORDERS

The trend of new orders in the last four months was:	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Up	31	34	36	37	23	47	56
Same	21	18	18	20	38	3	41
Down	13	7	11	8	29	37	—
No answer	35	41	35	35	10	13	3

PRODUCTION/SALES TURNOVER

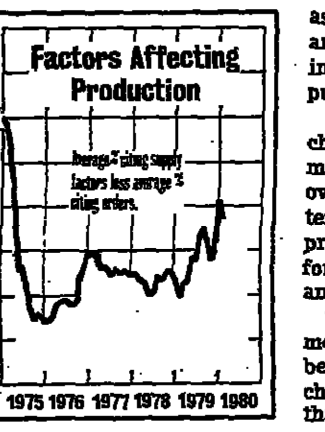
Those expecting production/sales turnover in the next 12 months to:—	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Rise over 20%	5	3	3	6	1	13	—
Rise 15-19%	5	3	5	3	—	13	28
Rise 10-14%	16	22	15	12	—	7	6
Rise 5-9%	16	17	20	23	5	7	56
About the same	48	46	51	50	92	47	10
Fall 5-9%	1	1	1	1	—	—	—
No comment	9	8	5	5	2	13	—

CAPACITY AND STOCKS

Better capacity use

THE INDEX for capacity utilisation continued to move slowly upwards. This reflected a fall in the number of companies in the chemical/oil and shipping/transport sectors saying they were operating at below planned output levels, which more than offset a rise in the engineering firms giving this answer.

In both the chemical/oil and shipping/transport groups, companies were more inclined to say their output was affected by a shortage of orders. Demand, as opposed to supply, factors are thus becoming more important in determining output.



The indices for the expected changes in stocks of raw materials and work in progress over the next 12 months have tended to drop. This was primarily a result of forecasts for lower stocks in the chemicals and oil sector.

The index of stock levels has moved up slightly, mainly because of a feeling among the chemicals and oil companies that stocks are too high.

CAPACITY WORKING

	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Above target capacity	14	14	12	10	—	20	—
Planned output	54	51	50	49	34	63	72
Below target capacity	30	33	36	37	66	17	28
No answer	2	2	2	4	—	—	—

STOCKS

Raw materials and components over the next 12 months will:—	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Increase	21	25	28	29	51	13	28
Stay about the same	39	39	43	47	30	30	37
Decrease	25	24	20	18	19	40	1
No comment	15	12	9	6	—	17	34
Manufactured goods over the next 12 months will:—							
Increase	24	26	26	22	52	14	—
Stay about the same	36	33	38	43	22	53	62
Decrease	15	14	13	11	3	20	1
No comment	25	27	23	23	23	13	37

FACTORS CURRENTLY AFFECTING PRODUCTION

	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				*February 1980*		
Home orders	69	64	68	68	79	83	41
Export orders	43	41	52	54	89	63	84
Executive staff	9	12	7	7	—	—	—
Skilled factory staff	25	26	25	26	42	27	6
Manual labour	8	6	4	5	—	13	—
Components	15	14	11	11	41	20	—
Raw materials	9	11	13	16	51	13	—
Production capacity (Plant)	11	7	8	9	10	30	—
Finance	2	2	2	2	—	—	6
Others	10	6	7	7	16	27	—
Labour disputes	31	30	33	38	63	40	34
No answer/No factor	7	8	7	7	—	—	3

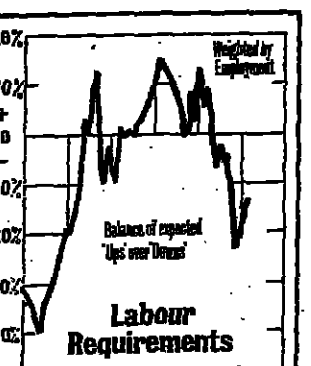
INVESTMENT AND LABOUR

Lower spending planned

INDUSTRY continues to project lower capital spending over the next 12 months. This is mainly because of lower planned expenditure in the chemicals and oil sector. The index for forecast capital investment is now at its lowest for over three years.

More companies in all three sectors complained that their liquidity levels were generally too low. Nearly one quarter of all the firms interviewed gave this response.

Both the engineering and the chemical/oil groups said that their reliance on outside finance was increasing, so this index has also tended to move upwards.



Companies contacted were somewhat more inclined to take on more labour over the next 12 months, mainly because of better employment prospects in the engineering sector. As a result, the index of labour requirements showed a further improvement from the very low levels of the end of last year.

Both the engineering and the chemical/oil groups were more inclined to mention lack of present or forecast demand as factors affecting labour take-up.

LABOUR REQUIREMENTS (Weighted by employment)

Those expecting their labour force over *the next 12 months to:—*	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				February 1980		
Increase	22	23	15	15	6	—	—
Stay about the same	38	36	47	44	40	78	25
Decrease	35	39	36	38	54	22	—
No comment	5	2	2	3	—	—	75

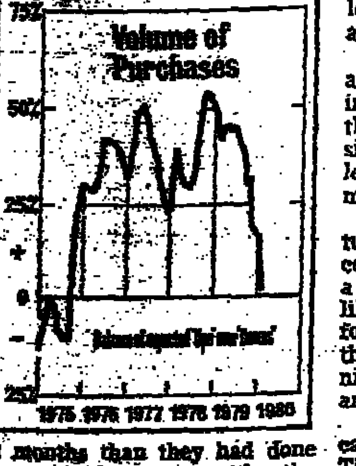
CAPITAL INVESTMENT (Weighted by capital expenditure)

Those expecting capital expenditure over the next 12 months to:—	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				February 1980		
Increase in volume	26	34	38	38	43	40	—
Increase in value but not in volume	16	9	11	16	22	—	65
Stay about the same	17	15	17	17	23	18	—
Decrease	26	23	20	20	8	41	31
No comment	15	19	14	9	4	1	4

COST AND PROFIT MARGINS

Price outlook improves

INDUSTRY HAS become a little less gloomy about the cost and price outlook over the next 12 months. All three sectors said they expected slightly lower price increases over the next 12 months than they had done four months ago, with the median forecast rise down to 14½ per cent against 15½ per cent. This was the first drop in the level of expectations since June 1979.



The median expected increases in unit costs and wages showed virtually no change of around 14½ and 17¼ per cent respectively. The engineering and shipping/transport groups were more pessimistic about the level of wage increases, the oil and chemicals sector less so.

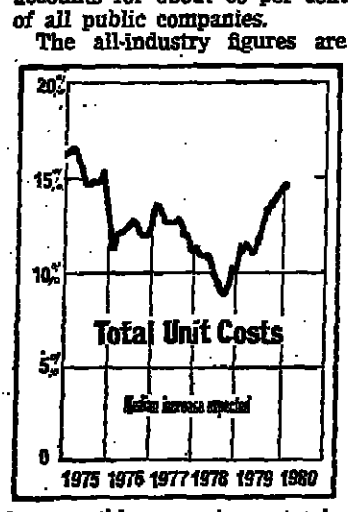
The oil/chemicals sector was as a result more hopeful about improving profit margins over the next 12 months. However, since the other two sectors were less optimistic, the profit margins index shows no change.

Questioned about their attitudes to high wage claims, the companies interviewed showed a slight weakening in their likely response compared with four months ago. Less than half the firms said they would definitely resist such claims, against around two-thirds last time.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based upon extensive interviews with top executives.

Three sectors and some 30 companies are covered in turn every month. They are drawn from a sample based upon the FT-Actuaries' Index, which accounts for about 60 per cent of all public companies.

The all-industry figures are four-monthly moving totals covering some 120 companies in 11 industrial sectors (mechanical engineering is surveyed every second month).



Complete tables can be purchased from Taylor Nelson and Associates.

COSTS

	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				February 1980		
Wages rise by:—							
10-14%	18	15	18	21	25	27	3
15-19%	46	37	37	32	73	50	57
20 24%	14	11	10	10	—	17	6
25-29%	—	1	1	1	—	—	—
Same	—	1	1	1	—	—	—
No answer	22	35	33	35	2	6	34
Unit cost rise by:—							
0-4%	1	2	1	1	—	—	—
5-9%	3	5	4	4	1	—	28
10-14%	35	33	41	43	47	40	31
15-19%	29	29	28	27	35	27	29
20-24%	7	8	6	5	10	3	—
25-29%	—	—	—	—	—	—	—
Decrease	—	—	2	2	—	—	—
No answer	25	23	18	18	7	30	6

PROFITS MARGINS

Those expecting profit margins over the *next 12 months to:—*	Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
	4 monthly moving total				February 1980		
Improve	32	31	24	29	27	33	37
Remain the same	40	40	41	37	56	17	35
Contract	25	25	29	27	16	37	28
No comment	3	4	6	7	1	13	—

INSURANCE

Building control changes urged

BY OUR INSURANCE CORRESPONDENT

BEFORE Christmas the Secretary of State for the Environment put several ideas to the National House Building Council for building control system changes "to stimulate wide public discussion and debate."

Mr. Michael Heseltine emphasised that he had at that stage no commitment to any particular proposal, but was determined minimum building standards for public health and safety should be maintained.

At present there are 389 enforcing authorities and some 4,000 building control officers beavering away, supervising observance of the Public Health Acts and a multitude of regulations.

The reformative purpose seems to be to transfer, as far as possible, the control of standards from the public to the private sector, with consequent saving to local and regional government and, hopefully, a reduction in the potential financial liabilities arising from the existing system.

In private housing, the NHBC's inspection functions to some degree already duplicate work done by local authorities. In his pre-Christmas speech, Mr. Heseltine, asked the council if it could in principle assume responsibility for control of private housing and consider in detail several practical operational problems.

But there is no similar organisation to the NHBC to become a watchdog for commercial and industrial building. Mr. Heseltine said, there is no ready made solution to hand. Seemingly some responsibility would have to remain with local or regional authorities, but he suggested "certification by qualified designers and engineers which would be backed by insurance."

This apart, insurers must be interested from both material damage and liability standpoints in his ideas. They will be watching the development of firm proposals to ensure there is no reduction in standards, no consequent increase of hazards in risks they already cover.

Assuming a greater burden on designers, engineers and so on, where stands the insurance market at the moment? Negligence cover is widely available to protect against personal injury claims and claims for damage to property other than the building in question.

But what might be called defective workmanship insurance is not available to enable contractors to put right defects in buildings they have constructed.

So the certification idea poses considerable problems for insurers and the size of the problems grows in relation to any contemplated guarantee period.

Objectively, 10 years might be thought to be the minimum and every insurance mind must boggle at the thought of providing a defects guarantee, enforceable in 1990 in that year's inflated pounds, but financed by premium collected in 1980 money.

If the NHBC had greater private housing responsibility, the council would presumably think it necessary to return to the insurance market for greater protection. The council had cover from 1965 until 1978 when it decided to form its own insurance company to back the NHBC scheme.

It would scarcely seem prudent to subject that company to the financial uncertainties of wider responsibility. But, again, would insurers want to step in to pick up any long-term liability?

Liability apart, insurers have a positive axe to grind, particularly in the domestic sector where subsidence cover is generally provided.

They consider there is urgent need for better control over the release of building land and improving standards for design of foundations on sub-standard land.

Insurers will continue to press for these changes, irrespective of how the debate goes on the wider issues raised by Mr. Heseltine.

APPOINTMENTS

Lazard Brothers board post for J. W. Glanville

Mr. J. W. Glanville has been appointed a director of LAZARD BROTHERS. Mr. Glanville, a U.S. citizen, is a general partner in Lazard Frères, New York. He is a director of Halliburton Company, International Minerals and Chemical Corporation and the Offshore Company, and a trustee of the California Institute of Technology. As previously announced Mr. D. Meinertzhagen has now resigned as a director of Lazard Brothers on reaching retirement age.

★

Mr. C. G. Dummer has joined the Board of SEARS ENGINEERING as chief executive. The company is a subsidiary of Sears Holdings and Mr. Dummer will be responsible for the engineering activities of the Sears Holding group of companies. He was formerly director of industrial operations at Dana-Europe.

★

The following appointments have been made in HAWKER SIDDELEY companies: Mr. J. M. Durber becomes chairman of South Wales Switchgear, Mr. R. A. Grierson, deputy chairman, and Mr. A. L. Wolfendale, managing director. Mr. D. A. Stack joins that Board and Mr. G. J. Clarke has been made finance director. Mr. Durber has also been appointed chairman and Mr. Grierson, deputy chairman, of Brush Switchgear, and Mr. A. L. Wolfendale joins the Board of the company. Mr. T. W. B. Sallitt takes over as chairman and Mr. Grierson, deputy chairman, of Brush Power Equipment and Brush Fusegear. Mr. R. P. Hampson is now managing director of Electric Construction and Mr. R. G. Ayres, production director, of Brush Electrical Machines.

★

Mr. Clive G. Stone has been appointed chairman and chief executive of the DOLLOND AND AITCHISON GROUP and chairman of DOLLOND INTERNATIONAL. Mr. Cyril Howell has retired as chairman of the two concerns and the associated companies. Mr. Stanley J. Rowland becomes deputy chairman of Dollond and Aitchison Group. Mr. Howell continues within the group as chairman of Wesley Jessen (UK) and retains his public relations position for the group to advise on special projects.

★

JOHN PLUMER AND PARTNERS, which has been granted Lloyd's broker status by the Committee of Lloyd's, has appointed the following additional directors with responsibilities for insurance and reinsurance business in the UK and overseas: Mr. R. N. L. Helman, Mr. D. N. Langley, Mr. R. H. Pikett, Mr. I. Ryder-Smith (marine); Mr. D. E. Parker, Mr. J. T. Walden; Mr. H. J. Whitlock (non-marine); Mr. T. L. W. Evans (aviation). Mr. T. McEwen has become finance director.

★

Mr. Brian R. Bentley is now director North West Europe for KEPNER-TREGOE following the resignation of Mr. Richard S. Handscombe.

★

Mr. Norman Wood has been appointed secretary of the ROYAL LONDON MUTUAL INSURANCE SOCIETY.

★

Mr. Peter Kiernan has been appointed sales director for MASSON SEELEY AND CO, Downham Market, Norfolk.

★

Mr. David R. Fairbairn has been appointed director of the NATIONAL COMPUTING CENTRE. He is at present director of marketing, EMI Medical.

★

Mr. N. A. McBrien, group chief accountant of ROBERTSON FOODS, has become secretary to the company. He succeeds Mr. J. M. Bradbury, who is moving to the Manchester factory of James Robertson and Sons preserve manufacturers in his capacity as finance director.

LOCAL AUTHORITY BOND TABLE

Authority (*telephone number in parentheses*)	Annual gross interest	Interest payable	Minimum sum	Life of bond
	%		£	Year
Alyn and Deeside (0244 531212)	15¼	½-year	5,000	1
Knowsley (051 548 6555)	15⅛	½-year	1,000	1
Redbridge (01-478 3020)	14¾	½-year	200	2-3
Redbridge (01-478 3020)	14	½-year	200	5-6

Public Works Loan Board rates

Effective from February 23

Years	Quota loans repaid by EIP†	Quota loans repaid A‡	Quota loans repaid at maturity§	Non-quota loans A* repaid by EIP†	Non-quota loans A* repaid A‡	Non-quota loans A* repaid at maturity§
Up to 5	15⅞	15½	15⅝	16⅜	16¾	16⅞
Over 5, up to 10 ...	15⅛	15½	15	16¼	15¾	15¼
Over 10, up to 15...	15¼	15	14⅞	15¾	15½	15¼
Over 15, up to 25...	14⅞	14¾	14⅝	15⅜	15¼	15⅛
Over 25	14¾	14⅝	14⅝	15¼	15⅛	15⅛

* Non-quota loans B are 1 per cent higher in each case than non-quota loans A. † Equal instalments of principal. ‡ Repayment by half-yearly annuity (fixed equal half-yearly payments to include principal and interest). § With half-yearly payments of interest only.

Swedish bank sees difficult year

BY VICTOR KAYFETZ IN STOCKHOLM

THE DIRECTORS of Svenska Handelsbanken (SHB) write in the Swedish bank's annual report that "all indications are that the banking year 1980 will be considerably worse than the preceding year." SHB recorded a 17 per cent rise in pre-tax profit on banking operations to Sk 2950m ($229m) last year.

The Swedish credit market tightened during the second half of 1979, with the official discount rate moving up 2.5 per cent to 9 per cent and liquidity and cash reserve requirements for banks being raised. In January, the discount rate went up to an all-time high of 10 per cent, and there are signs *it may have to follow foreign* interest rates even higher.

The SHB annual report provides new figures indicating that year-end deposits were SKr 30.9bn, up 10 per cent compared with 12 months earlier, and year-end lending stood at SKr 31.7bn, or 14 per cent higher than at the close of 1978. The monthly averages for these years published earlier were somewhat smaller. Total assets at the end of 1979 were SKr 56.3bn ($13.6bn).

The rival Skandinaviska Enskilda Banken (SEB) remained slightly bigger than SHB, with year-end deposits up 8 per cent to SKr 32.5 bn, lending more than 18 per cent higher than on the last day of 1978 at SKr 32.9bn, and a closing balance of SKr 63.5bn.

SHB said that 75 per cent of the increase in its lending during 1979 was in foreign currencies, mainly taking the form of basket loans including a mixture of stronger and weaker currencies to minimise exchange risks.

The yield on SHB shareholders' funds dropped by 0.2 points to 15.4 per cent in 1979, but remained ahead of other Swedish commercial banks.

SHB's high-interest "all-in-one account," which helped to precipitate a new scramble for private deposits by Swedish banks during the second half of 1979, had attracted 100,000 savers by the year-end, and their accounts totalled SKr 4.3bn. A month later, the amount had climbed to SKr 6.9bn, SHB says.

The employee-owned shareholding fund, Stiftelsen Oktagonen, which was created last March, received an appropriation of SKr 30m, making it one of the bank's largest shareholders. The sum of SKr 8m was appropriated to a newly created innovation fund, from which local branch offices will be able to grant money for the development of promising inventions. Both appropriations were recorded as extraordinary costs.

As reported earlier, the board is proposing a dividend of SKr 4.30 per share, up SKr 0.60, for a total payment of SKr 118m.

Rembrandt buys stake in Total

BY BERNARD SIMON IN JOHANNESBURG

DR. ANTON RUPERT'S Rembrandt Group, whose main liquor, has bought 20 per cent of Total South Africa, the oil company controlled by Compagnie Francaise des Pétroles of France. Total accounts for about 12 per cent of petrol sales in South Africa, and the Rembrandt purchase is seen as another step by Afrikaans-oriented business interests, centred on General Mining (Genmin), to build up a substantial stake in the energy field.

Rembrandt's share in Total is in the form of .9m new shares issued to its wholly-owned subsidiary Partnership in Industry. The purchase price has not been disclosed.

The South African interest in Total is now 38.4 per cent, with Rembrandt accounting for 20 per cent and Volkskas (the country's third largest bank) and the insurance giant Old Mutual holding theremaining 18 per cent.

Total is South Africa's fifth largest oil company, behind Caltex, Mobil, BP and Shell, each of which has a market share of roughly 20 per cent. Total controls about 650 filling stations. The management is mostly South African.

Among Rembrandt's other investments is a 25 per cent stake in Federale Mynbou, a company which controls General Mining. Genmin recently enlarged to almost 50 per cent its stake in Trek, another local oil company, in which Shell and BP also have shares. Trek has the right, in terms of government guidelines, to build South Africa's next oil refinery.

Kugelfischer in move to diversify

By Kevin Done in Frankfurt

KUGELFISCHER Georg Schaefer, the largest bearings manufacturer in West Germany, increased its sales world-wide last year by nearly 10 per cent to DM2bn ($1.1bn) compared with DM1.8bn in 1978.

With current order books standing above last year's level, the company is expecting further growth in volume sales in 1980, although the expansion is unlikely to match the rate of growth achieved in 1979.

Nearly 80 per cent of Kugelfischer's sales are accounted for by bearings, but the group is now following a strategy to diversify into other fields. The next step in this direction will be taken with the acquisition of Frieseke and Hoepfner, a concern involved in the manufacture of radiation measuring instruments, hydraulic tools and precision machinery.

Frieseke and Hoepfner has been in financial difficulties for some years, and since 1973 has recorded accumulated losses of DM10m. Its lack of financial resources has caused the indefinite postponement of investment urgently needed for product development and the expansion of manufacturing capacity.

Australian takeover battle intensifies

BY JAMES FORTH IN SYDNEY

THE COMPLICATED battle for control of the finance company Australian Finance and Securities (AFS) intensified last week with a renewed bid from the New Zealand group Marac Holdings. But Hambro Australia, an offshoot of Hambros Bank of the UK and the largest shareholder in AFS, rebuffed the proposal, claiming that it had no binding agreement to sell to Marac.

The contest started late in January when Marac announced that it had received approval from the Foreign Investment Review Board (FIRB) in Australia to buy the 34 per cent stake held by Hambro. The Stock Exchange insisted that Marac should make a bid to all AFS holders, or stand in the market for one month, but the FIRB would not agree to the New Zealand group increasing its stake.

Associates Corporation of North America, an offshoot of Gulf and Western, then unexpectedly announced an offer for the entire capital, conditional on at least 50 per cent acceptance. The existing foreign shareholding in AFS is 58 per cent, with the Philadelphia National Bank owning 24 per cent.

Associates planned that after its bid closed, it would ensure that the eventual foreign holding did not exceed this level. Marac has now come up with its alternative: it enlisted the help of "Australian interests" to stand in the market for one month at $A1 per share for the fully paid shares and 74 cents for the partly paid, operating through the Sydney sharebroker Jackson Graham Moore

PENDING DIVIDENDS

	Date	Announcement last year
*AAH	Mar. 5	Int. 3.025
APV	Mar. 29	Final 4.245
*Anglo-Amer. Inv.	Mar. 13	Final 520c
Armstrong Equipment	Mar. 21	Int. 0.88
*Ault and Wiborg	Mar. 7	Final 1.44
BBA	Mar. 28	Final 1.784
BICC	Mar. 29	Final 5.29
BSR	Mar. 9	Final 3.916
BTR	Mar. 14	Final 5.5
Bk. of Scotland	Apr. 3	Final 6.083
*Barclays Bk.	Mar. 20	Final 7.41
Barratt Devs.	Mar. 19	Int. 2.9
Bejam	Mar. 21	Int. 0.77
Bell (A.)	Mar. 21	Int. 1.788
*Bibby (J.)	Mar. 11	Final 6.732
Booker McConnell	Mar. 29	Final 3.952
Bowater	Apr. 5	Final 6.771
Bowring (C. T.)	Mar. 22	Final 2.348
British Aluminium	Mar. 21	Final 42.86
British Enkalon	Feb. 28	Final nil
*BP	Mar. 13	Final 16.885
British Printing	Apr. 5	Final 2.4
*British Vita	Mar. 4	Final 1.6
Brooke Bond	Mar. 13	Int. 0.816
Brown Boveri Kent	Apr. 5	Final 1.2
*Cadbury Schweppes	Mar. 13	Final 2.446
Cape Inds.	Apr. 3	Final 5.969
Carlton Inds.	Mar. 26	Final 3.5
Coates Bros.	Mar. 29	Final 1.731
Collins (Wm.)	Mar. 15	Final 3.094
*Cons. Gold Fields	Mar. 5	Int. 3.511
Corah	Mar. 8	Final 1.17
Dawnay Day	Mar. 21	Int. 0.75
*De Beers Cons. Mines	Mar. 11	Final 45c
*Ductile Steels	Mar. 11	Int. 2.118
Expanded Metal	Mar. 19	Final 2.345
Fairclough Constr.	Mar. 13	Final 2.0
*Fisons	Mar. 3	Final 8.337
Freemans (Ldn. SW9)	Apr. 2	Final 1.519
Gibbons Dudley	Mar. 22	Final 2.051
*Grindlays	Mar. 4	Final 2.071
GKN	Apr. 5	Final 16.845
Hall Eng.	Mar. 18	Final 2.471
Harrisons Mlysn. Ests.	Mar. 19	Int. 1.5
Hepworth Ceramic	Mar. 20	Final 2.651
House of Fraser	Mar. 29	Final 3.437
*Howden (Alex.)	Mar. 27	Final 4.5
*Ibstock Johnsen	Mar. 28	Final 4.110†§
Inveresk	Mar. 20	Final 1.417
*Jacobs (John I.)	Mar. 19	Final 1.35
Johnson and Firth Brown	Mar. 16	Int. 1.3
*Kleinwort Benson	Apr. 2	Final 3.81
Ladbroke	Apr. 5	Final 4.017
Laird Gp.	Apr. 2	Final 1.52
Law Land	Apr. 3	Final 0.8
Legal and Gen. Assce.	Mar. 28	Final 4.194
Lex Service	Mar. 8	Final 2.7
Lilley (F. J. C.)	Apr. 5	Final 1.675
Liverpool Daily Post	Mar. 21	Final 5.098
London Brick	Apr. 5	Final 2.190
*Low and Bonar	Mar. 31	Final 8.16
Lucas Inds.	Mar. 29	Int. 2.587
*Metal Closures	Mar. 19	Final 2.805
*Midland Bank	Mar. 14	Final 9.942
*Mitchell Cotts	Mar. 6	Int. 0.556
Morgan Crucible	Apr. 5	Final 2.237
Mucklow (A. and J.)	Mar. 23	Int. 1.32
Newman Tonks	Mar. 23	Int. 1.5
News Intl.	Mar. 29	Final 6.48
Ocean Transport	Apr. 2	Final 4.393
Peachey Property	Apr. 4	Int. 1.0
Philips' Lamps	Mar. 22	Final dfls
Phoenix Assce.	Apr. 4	Final 8.445
*Prudential	Mar. 26	Final 5.263
Reckitt and Colman	Apr. 2	Final 6.653
Reed (Austin)	Mar. 28	Final 3.051
*Rentokil	Mar. 4	Final 1.15
Rockware	Mar. 21	Final 3.67
Rolls-Royce Motors	Mar. 12	Final 2.995
*Royal Dutch	Mar. 6	Final Fl 5.75
*Royal Insce.	Mar. 3	Final 11.5
Samuel Props	Mar. 29	Int. 1.0
Savoy Hotel	Apr. 3	Final 1.692
Schroders	Mar. 28	Final 9.775
*Shell	Mar. 6	Final 6.986
Slough Ests.	Mar. 28	Final 1.529
Smith and Nephew	Mar. 15	Final 1.780
*Steetley	Mar. 20	Final 4.473
Stone-Platt	Mar. 22	Final 1.33
Sun Alliance	Apr. 4	Final 11.505
Taylor Woodrow	Apr. 5	Final 6.485
*Tiger Oats	Mar. 12	Final 33c
Tilling (T.)	Mar. 21	Final 3.01
*Transport Dev.	Mar. 13	Final 2.351
Tricentrol	Mar. 15	Final 0.837
*Tube Invs.	Mar. 19	Final 12.421
*Turner and Newall	Mar. 12	Final 7.0
*Unilever	Mar. 4	Final 27%
Utd. Biscuits	Mar. 13	Final 1.506
Utd. City Merchants	Mar. 8	Int. 0.45
Ward White	Mar. 30	Final 2.68
*Waterford Glass	Mar. 18	Final 1.05
*Weir Gp.	Mar. 19	Final 3.86
Willis Faber	Mar. 20	Final 6.84
Wolf Elect. Tools	Mar. 22	Final 0.789
Wolseley-Hughes	Mar. 15	Int. 3.66
*Woolworth (F. W.)	Mar. 12	Final 3.245
Yorkshire Chems.	Mar. 22	Final 2.44

* Board meeting intimated. † Rights issue since made. ‡ Tax free § Scrip issue since made. ¶ Forecast.

BASE LENDING RATES

A.B.N. Bank	17 %	⊡ Guinness Mahon	17 %
Allied Irish Bank	17 %	Hambros Bank	17 %
Amro Bank	17 %	■ Hill Samuel	§17 %
American Express Bk.	17 %	C. Hoare & Co.	†17 %
Henry Ansbacher	17 %	Hongkong & Shanghai	17 %
A P Bank Ltd.	17 %	Industrial Bk. of Scot.	17½%
⊡ Arbuthnot Latham	17 %	Keyser Ullmann	17 %
Associates Cap. Corp.	17 %	Knowsley & Co. Ltd.	18½%
Banco de Bilbao	17 %	Langris Trust Ltd.	17 %
Bank of Credit & Cmce.	17 %	Lloyds Bank	17 %
Bank of Cyprus	17 %	Edward Manson & Co.	18 %
Bank of N.S.W.	17 %	Midland Bank	17 %
Banque Belge Ltd.	17 %	⊡ Samuel Montagu	17 %
Banque du Rhone et de la Tamise S.A.	17½%	⊡ Morgan Grenfell	17 %
Barclays Bank	17 %	National Westminster	17 %
Bremar Holdings Ltd.	18 %	Norwich General Trust	17 %
Brit. Bank of Mid. East	17 %	P. S. Refson & Co.	17 %
⊡ Brown Shipley	17 %	Rossminster	17 %
Canada Perm't Trust	18 %	Ryl. Bk. Canada (Ldn.)	17 %
Cayzer Ltd.	17 %	Schlesinger Limited	17 %
Cedar Holdings	17 %	E. S. Schwab	17 %
⊡ Charterhouse Japhet	17 %	Security Trust Co. Ltd.	18 %
Choulartons	17 %	Standard Chartered	17 %
C. E. Coates	17 %	Trade Dev. Bank	17 %
Consolidated Credits	17 %	Trustee Savings Bank	17 %
Co-operative Bank	*17 %	Twentieth Century Bk.	17 %
Corinthian Secs.	17 %	United Bank of Kuwait	17 %
The Cyprus Popular Bk.	17 %	Whiteaway Laidlaw	17½%
Duncan Lawrie	17 %	Williams & Glyn's	17 %
Eagil Trust	17 %	Wintrust Secs. Ltd.	17 %
E. T. Trust Limited	17 %	Yorkshire Bank	17 %
First Nat. Fin. Corp.	18½%		
First Nat. Secs. Ltd.	18 %		
Robert Fraser	18 %		
⊡ Antony Gibbs	17 %		
Greyhound Guaranty	17 %		
Grindlays Bank	‡17 %		

⊡ Members of the Accepting Houses Committee.
* 7-day deposits 16%, 1-month deposits 15¾%.
† 7-day deposits on sums of £10,000 and under 15%, up to £25,000 15½% and over £25,000 15¾%.
‡ Call deposits over £1,000 15%.
§ Demand deposits 15%.

CORAL INDEX: Close 466-471 (unchanged)

CURRENCIES, MONEY AND GOLD

Belgian franc in the doldrums

BY JONAS CROSLAND

WHETHER BY design or circumstances, the major industrialised nations of the western world have once again embarked upon an interest rate war. There have been five increases in discount rates just in the past two weeks, including the Belgium discount rate, which went to 12 per cent from 10½ per cent last Thursday. With major countries motivated, by rising inflation and currency outflows, to increase interest rates, the Belgian authorities have been caught in a vicious upward spiral. For although Belgium has its economic problems, the franc's performance is dependant on how the Deutsche Mark moves. High interest rates will not in themselves stimulate any economic recovery, but for the time being, the Belgians have committed themselves to this way of supporting the franc, and any suggestions that have been made that the franc should be devalued, have been avoided so far.

So the franc has cost the Central Bank around BFr 7bn in just one week's support operations, and this level of help obviously cannot be maintained indefinitely.

Against the European currency unit, the franc had already been heading for trouble for some time, and on Thursday the alarm bell rang when it hit its warning level, which is three-quarters of its maximum permitted divergence against its ECU central rate.

Last week's rise in the discount rate was partly in anticipation of a further rise in the West German discount rate (which it did) and also to help stem the flow of funds out of Belgium and into more attractive currencies. So far the flow has not slowed appreciably, and as one Belgian official put it, there are two things that would help the Belgian franc at the moment, a worldwide fall in inflation rates and a decline in the value of the Deutsche Mark. That rather says it all.

GOLD

	February 29		February 28	
Gold Bullion (fine ounce)				
Close	$663-643	(£280¼-283)	$639-644	(£279¾-282)
Opening	$643-648	(£281½-284)	$636-641	(£279-280¼)
Morning fixing	$640	(£280.603)	$636	(£278.931)
Afternoon fixing	$637	(£280.148)	$646	(£282.429)
Gold Coins				
Krugerrand	$640-644	(£281½-283½)	$643-647	(£281-284)
Mapleleaf	$635-645	(£279½-284½)	$640-650	(£280-285)
New Sovereigns	$160-162	(£70½-72)	$165-165	(£71-73)
King Sovs.	$181-184	(£79½-81½)	$182-185	(£79½-81½)
Victoria Sovs.	$181-184	(£79½-81½)	$182-185	(£79½-81½)
French 20s	$147-149		$149½-152½	
50 pesos Mexico	$780-790		$790-800	
100 Cor. Austria	$610-620		$620-630	
$20 Eagles	$745-755		$753-758	
$10 Eagles	—		—	
$5 Eagles	—		—	

OTHER CURRENCIES

Feb. 29	£	$		£ Note Rates
Argentina Peso	3858-3878	1700-1705	Austria	28.75-29.00
Australia Dollar	2.0710-2.0750	0.9120-0.9125	Belgium	67.15-67.75
Brazil Cruzeiro	102.12-103.12	44.90-45.35	Denmark	12.54-12.61
Finland Markka	8.53-8.54	3.7590-3.7595	France	9.40-9.46
Greek Drachma	88.851-90.950	38.95-39.15	Germany	4.02½-4.04½
Hong Kong Dollar	11.21¼-11.23½	4.9350-4.9380	Italy	1870-1925
Iran Rial	n/a	n/a	Japan	570-575
Kuwait Dinar (KD)	0.620-0.630	0.2741-0.2742	Netherlands	4.43-4.46½
Luxembourg Frc.	65.50-65.60	28.84-28.86	Norway	11.15-11.22
Malaysia Dollar	4.9625-4.9725	2.1835-2.1885	Portugal	105-113
New Zealand Dlr.	2.3390-2.3440	1.0300-1.0310	Spain	150-157½
Saudi Arab. Riyal	7.61-7.71	3.3635-3.3685	Sweden	9.54-9.60
Singapore Dollar	4.9310-4.9410	2.1700-2.1720	Switzerland	3.85-3.86
Sth. African Rand	1.8345-1.8365	0.8070-0.8080	United States	2.275-2.285
U.A.E. Dirham	8.48-8.58	3.7410-3.7440	Yugoslavia	51½-53½

Rate given for Argentina is free rate.

THE DOLLAR SPOT AND FORWARD

Feb. 29	Day's spread	Close	One month	% p.a.	Three months	% p.a.
UK†	2.2685-2.2850	2.2725-2.2735	0.50-0.40c pm	2.37	1.00-0.90 pm	1.67
Ireland†	2.0780-2.0850	2.0780-2.0800	0.52-0.42c pm	2.71	1.10-1.00 pm	2.02
Canada	1.1452-1.1476	1.1470-1.1473	0.31-0.27c pm	3.03	0.95-0.88 pm	3.19
Nethlnd.	1.9470-1.9520	1.9503-1.9518	0.80-0.70c pm	4.61	2.08-1.98 pm	4.16
Belgium	28.75-28.86	28.84-28.86	6-4½c pm	2.19	15-12 pm	1.87
Denmark	5.5110-5.5250	5.5225-5.5250	2.50-3.00ore dis	−5.97	5.50-6.00dis	−4.16
W. Ger.	1.7655-1.7780	1.7760-1.7770	1.29-1.19pf pm	8.38	3.35-3.25 pm	7.43
Portugal	48.08-48.35	48.25-48.35	8-18c dis	−3.23	25-55 dis	−3.31
Spain	67.04-67.25	67.14-67.19	15-25c dis	−3.58	55-70 dis	−3.73
Italy	818.60-821.50	821.00-821.50	0.90-1.4 lire dis	−1.68	5-6 dis	−2.68
Norway	4.9025-4.9145	4.9100-4.9120	1.20-0.70ore pm	2.32	3.80-3.30 pm	2.89
France	4.1485-4.1610	4.1595-4.1610	1.08-0.98c pm	2.97	2.55-2.45 pm	2.40
Sweden	4.2095-4.2190	4.2120-4.2135	0.90-0.70ore pm	2.28	2.55-2.35 pm	2.33
Japan	249.75-251.75	251.55-251.65	1.50-1.35y pm	6.80	3.90-3.75 pm	6.08
Austria	12.674-12.697	12.690-12.697	8.60-8.00gro pm	7.85	24.75-22.75pm	7.48
Switz.	1.6760-1.7045	1.7015-1.7025	1.91-1.84c pm	13.22	4.68-4.60 pm	10.90

† UK and Ireland are quoted in U.S. currency. Forward premiums and discounts apply to the U.S. dollar and not to the individual currency.

THE POUND SPOT AND FORWARD

Feb. 29	Day's spread	Close	One month	% p.a.	Three months	% p.a.
U.S.	2.2685-2.2850	2.2725-2.2735	0.50-0.4c pm	2.37	1.00-0.90 pm	1.67
Canada	2.6010-2.6160	2.6015-2.6025	1.50-1.40c pm	6.69	3.20-3.10 pm	4.84
Nethlnd.	4.42½-4.46½	4.43½-4.44½	3½-2½c pm	7.09	7-6 pm	5.85
Belgium	65.36-66.75	65.50-66.60	25-15c pm	3.66	62-52 pm	3.48
Denmark	12.53-12.61	12.56½-12.57½	2¾-4¾ore dis	−3.58	6¾-8¾ dis	−2.47
Ireland	1.0880-1.0955	1.0930-1.0940	0.04p pm-0.08dis	−0.11	par-0.10 dis	−0.18
W. Ger.	4.02-4.05½	4.03½-4.04½	4½-3½pf pm	10.77	9½-8½ pm	9.28
Portugal	109.20-103.90	109.50-109.70	5c pm-45 dis	−2.19	65-165 dis	−4.20
Spain	152.45-153.10	152.65-152.75	5c pm-45 dis	−1.57	55-155	−2.75
Italy	1,860-1,872	1,869½-1,870½	1¼ lire pm-¼ dis	0.48	3½-5½ dis	−0.96
Norway	11.17-11.21	11.17½-11.18½	6-0ore pm	5.37	13¾-11¾ pm	4.56
France	9.43-9.49	9.47½-9.48½	4½-3½c pm	5.38	10½-9½ pm	4.22
Sweden	9.56-9.62	9.60-9.61	4½-2½ore pm	4.06	9¾-7¾ pm	3.64
Japan	565-575	571½-572½	4.50-4.25y pm	9.18	11.05-10.75pm	7.62
Austria	28.80-28.95	28.83-28.88	18-8gro pm	5.41	72-62 pm	9.29
Switz.	3.82-3.88½	3.86½-3.87½	5½-4½c pm	15.50	13½-12½ pm	13.05

Belgian rate is for convertible francs. Financial franc 67.15-67.25. Six-month forward dollar 1.67-1.57c pm, 12-month 2.65-2.55c pm.

EURO-CURRENCY INTEREST RATES

The following nominal rates were quoted for London dollar certificates of deposit: one-month 16.00-16.10 per cent; three-months 16.65-16.75 per cent; six months 16.70-16.80 per cent; one year 16.15-16.25 per cent.

Feb. 29	Sterling	U.S. Dollar	Canadian Dollar	Dutch Guilder	Swiss Franc	West German Mark	French Franc	Italian Lira	Asian $	Japanese Yen
†Short term	17⅝-17⅞	15⅛-15⅜	8-9	10⅞-11⅛	2-2¼	7⅝-7¾	12¾-13	13-15	—	8⅛-10
7 days' notice	17⅞-18⅛	15¼-15½	8-9	11⅛-11⅜	2⅛-2⅜	8-8⅛	12⅞-13⅛	14-16	14⅛-14⅜	9¾-10⅛
Month	18¼-18½	15$\frac{11}{16}$-16$\frac{1}{16}$	13⅛-13⅛	11⅞-12⅛	4⅛-4¼	8⅝-8¾	13⅛-13⅜	17½-18⅛	14¾-14⅞	10$\frac{1}{16}$-10$\frac{3}{16}$
Three months	18½-18⅝	16$\frac{13}{16}$-17$\frac{1}{16}$	13¾-14⅛	12⅝-12⅞	5$\frac{1}{16}$-5$\frac{3}{16}$	9⅛-9¼	14¼-14½	19-20	16¾-16⅞	10½-10¾
Six months	18⅝-18⅞	16¾-17	14⅛-14½	12⅞-13⅛	6⅛-6¼	9$\frac{5}{16}$-9$\frac{7}{16}$	15-15¼	19¼-20¼	16$\frac{11}{16}$-16$\frac{13}{16}$	10⅛-10¼
One year	17⅝-17⅞	16⅜-16⅝	15⅜-15¾	12⅞-13⅛	6¼-6⅜	9⅜-9½	15-15¼	21-22	16⅛-16¼	10$\frac{3}{16}$-10$\frac{5}{16}$

Long-term Eurodollar two years 15¾-15⅞ per cent; three years 15-15¼ per cent; four years 14⅞-15⅛ per cent; five years 14¾-15 per cent; nominal closing rates. Short-term rates are call for sterling, U.S. dollars, Canadian dollars and Japanese yen; others two-day's notice. Asian rates are closing rates in Singapore.

LONDON MONEY RATES

Feb. 29 1980	Sterling Certificate of deposit	Interbank	Local Authority deposits	Local Auth. negotiable bonds	Finance House Deposits	Company Deposits	Discount market deposits	Treasury Bills ⊕	Eligible Bank Bills ⊕	Fine Trade Bills ⊕
Overnight	—	13-18¼	—	—	—	17½-17¾	14-17	—	—	—
2 days notice	—	—	17⅞-18¼	—	—	—	—	—	—	—
7 days or	—	—	—	—	—	—	—	—	—	—
7 days notice	—	18-18¼	17⅞-18¼	—	18⅜	18-18¼	17	—	—	—
One month	18$\frac{1}{16}$-18	18$\frac{1}{16}$-18$\frac{1}{16}$	17⅞-18⅛	19¼-19	18⅜	18¼	16⅞	15$\frac{49}{64}$	17$\frac{11}{16}$-18	18$\frac{1}{16}$
Two months	18$\frac{1}{16}$-18	18¼-18⅜	—	19-18¾	18⅜	—	16⅝	15$\frac{29}{32}$	17$\frac{11}{16}$-17⅞	18$\frac{1}{16}$
Three months	18¼-18	18¼-18⅜	18-18¼	18⅝-18⅜	18⅜	18-18¼	16⅛-16⅝	16⅛	17$\frac{9}{16}$-17⅝	17$\frac{11}{16}$
Six months	17$\frac{11}{16}$-17½	17⅝-17⅞	17½-18	17¼-16¾	18	18	—	—	16⅛	16⅞
Nine months	17-16¾	16⅞-17	—	17⅛-16⅝	17½	—	—	—	—	—
One Year	16¾-16½	16¾-16⅞	16⅞-17¼	16¾-16⅜	17	—	—	—	—	—
Two years	—	—	16¼-16¾	—	—	—	—	—	—	—

Local authorities and finance houses seven days' notice, others seven days fixed. * Long-term local authority mortgage rates nominally three years 16½-16½ per cent; four years 16-16⅛ per cent; five years 15⅞-16 per cent. ⊕ Bank bill rates in table are buying rates for prime paper. Buying rates for four-month bank bills 17$\frac{5}{16}$-17⅜ per cent; four-month trade bills 17½ per cent.

Approximate selling rates for one-month Treasury bills 15$\frac{25}{32}$-15$\frac{27}{32}$ per cent; two-months 15$\frac{31}{32}$ per cent; three-months 16$\frac{1}{32}$ per cent. Approximate selling rates for one-month bank bills 17$\frac{21}{32}$-17¾ per cent; two-months 17⅝-17¾ per cent; three-months 17$\frac{9}{16}$-17½ per cent; one-month trade bills 18$\frac{5}{16}$ per cent; two-months 17$\frac{15}{16}$ per cent and three-months 17$\frac{11}{16}$ per cent.

Finance Houses Base Rates (published by the Finance Houses Association) 18 per cent from March 1, 1980. Clearing Bank Deposit Rates for sums at seven days' notice 15 per cent. Clearing Bank Rates for lending 17 per cent. Treasury Bills Average tender rates of discount 16.1236 per cent.

CURRENCY RATES

Feb. 29	Bank rate %	Special Drawing Rights	European Currency Unit
Sterling	17	0.572166	0.620621
U.S. $	13	1.30377	1.41191
Canadian $	14	1.49256	1.61720
Austria Sch.	5¼	16.5253	17.8889
Belgian F.	12	37.5695	40.6807
Danish K.	13	7.18526	7.79375
D'Mark	7	2.31067	2.50332
Guilder	9½	2.54176	2.75323
French Fr.	9½	not avail.	5.86296
Lira	15	1070.67	1159.18
Yen	7¼	325.662	353.966
Norwgn. Kr.	9	6.46642	6.93390
Spanish Pta.	8	87.4073	94.9087
Swedish Kr.	10	5.49370	5.95290
Swiss Fr.	3	2.17534	2.39037

RECENT ISSUES

EQUITIES

Issue Price p‡	Amount Paid Up	Latest Renunc. Date	1979/80 High	1979/80 Low	Stock	Closing Price p‡	+ or —	Div. P. or Amount	Times Covered	Gross Yield	P.E. Ratio
50	50p	—	140	115	Berkley Exploration	128	—4	—	—	—	r
£1	F.P.	21/3	102	100	Child Health Res'ch	101	......	—	—	—	—
$80	F.P.	7/3	108	98½	Emess Lighting	108	......	b5.0	3.0	7.9	49
10	F.P.	28/2	11½	10	Keep Inv. Trust 5p	11½	+½	—	—	—	—
**	F.P.	7/3	89	72	Lon.Merc'tSecs.Defd	89	+6	—	—	—	—
—	F.P.	—	34	29	Roche Plant 10p	34	......	1.25	2.7	5.3	7.9

FIXED INTEREST STOCKS

Issue Price £	Amount Paid Up	Latest Renunc. Date	1979/80 High	1979/80 Low	Stock	Closing Price £	+ or —
¶¶	F.P.	—	37p	36½p	Aurora 5.85% Cum. Pref.	36½p	......
‖130p	F.P.	15/3	131pm	100p	Clifford (Chas.) 12% Cum. Pref.	115p	......
¶	F.P.	30/5	98p	94	Felixstowe Dock 9½% Cum Red Pref.	94	......
—	—	—	112	111	Globe Inv Tst 11½% Conv Uns Ln '90-95	111	......
**	F.P.	8/2	88p	85p	Hewitt (J.) 10% Cum. Pref.	85p	......
¶	£10	29/5	8⅝	8	Mid Kent Water 9% Red Pref. 1985	8	—¼
¶	F.P.	24/4	97	96	Rk'm'nw'h & Uxbridge Wtr. 9% RdPf 1985	95	—1

"RIGHTS" OFFERS

Issue Price p‡	Am'unt Paid Up	Latest Renunc. Date ●	Latest Renunc. Date ■	1979/80 High	1979/80 Low	Stock	Closing Price p‡	+ or —
$23.50	Nil	—	—	15pm	10pm	Bank of Montreal	10pm	—2½
330	Nil	—	—	61pm	35pm	Cluff Oil	35	......
33½	F.P.	22/2	28/3	69½	58½	Edwards (Louis C.)	62	—1
40	F.P.	22/1	29/2	101pm	69pm	Elson & Robbins	96pm	......
60	F.P.	3/1	24/1	845	660	Hammerson Prop. A	840	+15
60cts	Fil	—	—	435pm	180pm	Pancontinental	385pm	+20
25	F.P.	20/2	12/3	78	67	Paringa	72	......
25p	F.P.	21/2	13/3	84	60	Premier Cons. Oilfields	76	—2
R3.50‡‡	Nil	—	—	30pm	4pm	Rand London Coal Units	6pm	......

Renunciation date usually last day for dealing free of stamp duty. *b* Figures based on prospectus estimate. *g* Assumed dividend and yield. *u* Forecast dividend: cover based on previous year's earnings. F Dividend and yield based on prospectus or other official estimates for 1979. Q Gross. T Figures assumed. ‡ Cover allows for conversion of shares not now ranking for dividend or ranking only for restricted dividends. § Placing price to public. p‡ Pence unless otherwise indicated. ¶ Issued by tender. ‖ Offered to holders of ordinary shares as a "rights." ** Issued by way of capitalisation. §§ Reintroduced. ¶¶ Issued in connection with reorganisation, merger or takeover. ‖‖ Introduction. □ Issued to former preference holders. ■ Allotment letters (or fully-paid). ● Provisional or partly-paid allotment letters. ★ With warrants. †† Unlisted security. ‡‡ Issued as units comprising 2 participating pref. shares and 1 ord. share at R3.50 per unit. † Dealings under special rule.

UNIT TRUST SERVICE

OFFSHORE & OVERSEAS—contd.

[illegible]

FT UNIT TRUST INFORMATION SERVICE

AUTHORISED UNIT TRUSTS

Abbey Unit Tst. Mngrs. (a)

Allen Harvey & Ross Unit Tst. Mngrs.

Allied Hambro Group (a) (g)

Anderson Unit Trust Managers Ltd.

Ansbacher Unit Mgmt. Co. Ltd.

Arbuthnot Securities Ltd. (a)(c)

Archway Unit Tst. Mgs. Ltd.

Barclays Unicorn Ltd.

Baring Brothers & Co. Ltd.

Bishopsgate Progressive Mgmt. Co.

Bridge Fund Managers (a)(c)

Britannia Trust Management (a)(g)

The British Life Office Ltd. (a)

Brown Shipley & Co. Ltd.

Canada Life Unit Tst. Mngrs. Ltd.

Cannon (James) Mngt. Ltd.

Carliol Unit Fd. Mgrs. Ltd. (a)(c)

Charities Official Invest. Fund

Chieftain Trust Managers Ltd. (a)(g)

Confederation Funds Mgt. Ltd. (a)

Cosmopolitan Fund Managers (a)

Craigmount Unit Tst. Mgrs. Ltd.

Crescent Unit Tst. Mgrs. Ltd. (a)(g)

Discretionary Unit Fund Managers

E. F. Winchester Fund Mngt. Ltd.

Emson & Dudley Tst. Mngmnt. Ltd.

Equity & Law Un. Tr. M. (a)(b)(c)

Fidelity International Management Ltd.

James Finlay Unit Trust Mngt. Ltd.

Framlington Unit Mgt. Ltd. (a)

Friends' Provdt. Unit Tr. Mgrs.

Funds in Court

G.T. Unit Managers Ltd.

G. & A. Trust (a) (g)

Gartmore Fund Managers (a)(g)

Gibbs (Antony) Unit Tst. Mgs. Ltd. (a)

Govett (John)

Grieveson Management Co. Ltd.

Guardian Royal Ex. Unit Mgrs. Ltd.

Henderson Administration (a)(c)(g)

Hill Samuel Unit Tst. Mgrs. (a)

Investment Intelligence Ltd. (a)(g)

Key Fund Managers Ltd. (a)(g)

Kleinwort Benson Unit Managers

L. & C. Unit Trust Management Ltd.

Legal & General Tyndall Fund

Leonine Administration Ltd.

Lloyds Bk. Unit Tst. Mngrs. Ltd. (a)

Lloyd's Life Unit Tst. Mngrs. Ltd.

Local Authorities' Mutual Invest. Trust

M & G Group (y)(c)(z)

Manulife Management Ltd.

Mayflower Management Co. Ltd.

Mercury Fund Managers Ltd.

Midland Bank Group Unit Trust Managers Ltd. (a)

Minster Fund Managers Ltd.

MLA Unit Trust Mngmt. Ltd.

Murray Johnstone U.T. Mgmt. (a)

Mutual Unit Trust Managers (a)(g)

National Provident Inv. Mngrs. Ltd.

National Westminster (a)

NEL Trust Managers Ltd. (a)(g)

Northgate Unit Trust Managers Ltd. (c)(y)

Norwich Union Insurance Group (b)

Pearl Trust Managers Ltd. (a)(g)(z)

Pelican Units Admin. Ltd. (g)(x)

Perpetual Unit Trust Mngmt. (a)

Practical Invest. Co. Ltd. (y)(c)

Provincial Life Inv. Co. Ltd.

Prudl. Portfolio Mngrs. Ltd. (a)(b)(c)

Quilter Management Co. Ltd.

Reliance Unit Mgrs. Ltd.

Ridgefield Management Ltd.

Rothschild Asset Management (g)

Rowan Unit Trust Mngt. Ltd. (a)

Royal Tst. Can. Fd. Mgrs. Ltd.

Saturn Fund Management Limited

Save & Prosper Group

Schlesinger Trust Mngrs. Ltd. (a)(z)

J. Henry Schroder Wagg & Co. Ltd. (a)(c)

Scottish Equitable Fnd. Mgrs. Ltd.

Sebag Unit Tst. Managers Ltd. (a)

Security Selection Ltd.

Stewart Unit Tst. Managers Ltd. (a)

Sun Alliance Fund Mngt. Ltd.

Target Tst. Mngrs. Ltd. (a)(g)

Tower Unit Trust Mngt. Ltd.

Trades Union Unit Tst. Managers

Transatlantic and Gen. Secs. Co. (y)

Tyndall Managers Ltd.

TSB Unit Trusts (y)

Ulster Bank (a)

Unit Trust Account & Mgmt. Ltd.

Wieler Growth Fund

NOTES

INSURANCE PROPERTY BONDS

Abbey Life Assurance Co. Ltd.

Albany Life Assurance Co. Ltd.

AMEV Life Assurance Ltd.

Barclays Life Assur. Co. Ltd.

Beehive Life Assur. Co. Ltd.

Canada Life Assurance Co.

Cannon Assurance Ltd.

Capital Life Assurance

Charterhouse Magna Gp.

Chieftain Assurance Funds

City of Westminster Assurance

Commercial Union Group

Confederation Life Insurance Co.

Cornhill Insurance Co. Ltd.

Credit & Commerce Insurance

Crown Life

Crusader Insurance Co. Ltd.

Eagle Star Insur./Midland Assur.

Equity & Law Life Ass. Soc. Ltd.

Equity & Law (Managed Funds) Ltd.

Family Assurance Society

Gartmore Bonds

Assicurazioni GENERALI S.p.A.

General Portfolio Life Ins. C. Ltd.

Gresham Life Ass. Soc. Ltd.

Growth & Sec. Life Ass. Soc. Ltd.

Guardian Royal Exchange

Hambro Life Assurance Limited

Hearts of Oak Benefit Society

Hill Samuel Life Assur. Ltd.

Imperial Life Ass. Co. of Canada

Irish Life Assurance Co. Ltd.

King & Shaxson Ltd.

Langham Life Assur. Co. Ltd.

Legal & General (Unit Assur.) Ltd.

Legal & General Prop. Fd. Mgrs. Ltd.

Life Assur. Co. of Pennsylvania

Lloyds Life Assurance

London A'deen & Nthn. Mtl. Assur. Ltd.

London Indemnity & Gnl. Ins. Co. Ltd.

London Life Linked Assur. Ltd.

The London & Manchester Ass. Gp.

M & G Group

Manufacturers Life Insurance Co.

Merchant Investors Assurance

NEL Pensions Ltd.

NPI Pensions Management Ltd.

New Zealand Ins. Co. (UK) Ltd.

Norwich Union Insurance Group

Phoenix Assurance Co. Ltd.

Planned Savings Group

Prop. Equity & Life Ass. Co.

Property Growth Assur. Co. Ltd.

Provincial Life Assurance Co. Ltd.

Prudential Pensions Limited

Reliance Mutual

Rothschild Asset Management

Royal Insurance Group

Save & Prosper Group

Schroder Life Group

Scottish Widows' Group

Skandia Life Assurance Co. Ltd.

Standard Life Assurance Company

Sun Alliance Fund Mangmt. Ltd.

Sun Alliance Linked Life Ins. Ltd.

Sun Life of Canada (UK) Ltd.

Sun Life Unit Assurance Ltd.

Target Life Assurance Co. Ltd.

Transinternational Life Ins. Co. Ltd.

Trident Life Assurance Co. Ltd.

Tyndall Assurance/Pensions

Vanbrugh Life Assurance

Vanbrugh Pensions Limited

Welfare Insurance Co. Ltd.

Windsor Life Assur. Co. Ltd.

OFFSHORE & OVERSEAS FUNDS

Albany Fund Management Limited

Alexander Fund

Allen Harvey & Ross Inv. Mgt. (C.I.)

Arbuthnot Securities (C.I.) Limited

Bank of America International S.A.

Banque Bruxelles Lambert

Barbican Managers (Jersey) Ltd.

Barclays Unicorn International

Bishopsgate Commodity Ser. Ltd.

Bridge Management Ltd.

Britannia Tst. Mngmt. (C.I.) Ltd.

Brown Shipley Tst. Co. (Jersey) Ltd.

Butterfield Management Co. Ltd.

Capital International S.A.

Charterhouse Japhet

Clive Investments (Jersey) Ltd.

Cornhill Ins. (Guernsey) Ltd.

DWS Deutsche Ges. F. Wertpapiersp

Delta Group

Deutscher Investment-Trust

Dreyfus Intercontinental Inv. Fd.

Emson & Dudley Tst. Mgt. Jrsy. Ltd.

The English Association

Eurobond Holdings N.V.

F & C Mngmt. Ltd. Inv. Advisers

Fidelity Mgmt. & Res. (Bda.) Ltd.

Fidelity Mgmt. Research (Jersey) Ltd.

First Viking Commodity Trusts

Fleming Japan Fund S.A.

Frankfurt Trust Investment-GmbH

Free World Fund Ltd.

G.T. Management Ltd.

Gartmore Invest. Ltd. Ldn. Agts.

Hambro Pacific Fund Mgmt. Ltd.

Hambros Fd. Mgrs. (C.I.) Ltd.

Henderson Baring Group

Hill-Samuel & Co. (Guernsey) Ltd.

Hill Samuel Invest. Mgmt. Intnl.

N.V. Interbeheer

International Pacific Inv. Mgmt. Ltd.

J.E.T. Managers (Jersey) Ltd.

Jardine Fleming & Co. Ltd.

Leopold Joseph & Sons (Guernsey)

Kemp-Gee Management Jersey Ltd.

Keyser Ullman Ltd.

King & Shaxson Mngrs.

Kleinwort Benson Limited

Lazard Brothers & Co. (Jersey) Ltd.

Continued on previous page

FT SHARE INFORMATION SERVICE

BRITISH FUNDS

"Shorts" (Lives up to Five Years)

Five to Fifteen Years

Over Fifteen Years

Undated

INTERNATIONAL BANK

CORPORATION LOANS

COMMONWEALTH & AFRICAN LOANS

LOANS

Public Board and Ind.

Financial

30Ja	30J	FFI 13pc 1981	96¾	31.12 13.44	16.85
20J	20D	Do. 14pc '83	94½	19.11 14.90	15.95
31M	30S	ICFC 5½pc Deb '80-82	80xd	25.2 6.86	15.04
31M	30N	Do. 6¼pc Db. '81-84	73	22.10 8.81	15.00
11Ja	11J	Do. 10½pc Uns Ln. '86	84½	10.12 12.66	14.90
11Ja	11J	Do. 11pc Uns.Ln. '88	84	10.12 13.36	14.40
11Ja	11J	Do. 11¾pc Uns.Ln '90	85½	10.12 14.00	14.90
30J	31D	Do. 7¼pc ADeb. '89-92	58½	19.11 12.85	14.95
31M	30S	Do. 7¼pc A Db. '91-94	55xd	25.2 13.18	14.95
31M	30S	Do. 9pc 'A' '91-94	65xd	25.2 13.85	15.00
28F	31A	Do. 8⅞pc Ln. '92-97	62½xd	14.1 14.20	14.85
14S 14 Mar		Do. 12½pc Uns. Ln. 1992	86xd	11.2 14.53	15.00

FOREIGN BONDS & RAILS

AMERICANS

CANADIANS

BANKS AND HIRE PURCHASE

Feb.	Sept.	Com'l Aus. (SA1)	149	8.10	†018c	3.0	6.3	5.3
May		Com'zbk DM 10	880	577	Q26.69%	—	7.9	—
March		C'hgn Hbk.Kr100	975	379	Q13%	—	13.6	—
July	Oct.	Corinthian 10p	34	24.9	†1.05	5.9	4.4	3.9
May		Cred. France F75	£167⁄8	178	Q12.5%	—	6.1	—
Jan.	Apr.	Dawes (G. R.)	12	18.10	—	—	—	—
May	Nov.	Deutsche Bank DM50	£63½	17.5	Q28.12%	—	5.8	—
	—	F. C. Finance	60	8.10	2.2	4.9	5.2	5.5
	—	First Nat. 10p	15¼	974	—	—	—	0.9
	—	Do. Wrts. 75-83	2	—	—	—	—	—
June	Dec.	Gerrard Natnl.	216	22.10	†9.12	—	6.0	—
May	Nov.	Gibbs (A.)	80	24.9	2.2	—	3.9	—

BANKS & HP—Continued

Hire Purchase, etc.

BEERS, WINES AND SPIRITS

BUILDING INDUSTRY, TIMBER AND ROADS

CHEMICALS, PLASTICS

CHEMICALS, PLASTICS—Cont.

DRAPERY AND STORES

ELECTRICALS

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ENGINEERING—Continued

FOOD, GROCERIES, ETC.

FOOD, GROCERIES—Cont.

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INSURANCE—Continued

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Components

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Garages and Distributors

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TOBACCOS

[illegible]

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RUBBERS AND SISALS

[illegible]

TEAS

India and Bangladesh

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Sri Lanka

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Africa

[illegible]

MINES

CENTRAL RAND

[illegible]

EASTERN RAND

[illegible]

FAR WEST RAND

[illegible]

O.F.S.

[illegible]

FINANCE

[illegible]

DIAMOND AND PLATINUM

[illegible]

MINES—Continued

CENTRAL AFRICAN

Dividends Paid		Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's
May	Nov.	Coronation	390	24.9	Q54c	2.2	[illegible]
Nov.	May	Falcon Rh.50c	650	24.9	Q100c	1.7	[illegible]
	May	Rhod'n Corp. 16½p	40	21.4	0.56	6.5	[illegible]
—		Roan Cons. K4	230xd	25.2	†Q0.12	ϕ	[illegible]
Nov.	May	Wankie Col. Rh.1	62	22.10	Q9c	1.5	[illegible]
—		Zam.Cpr.SBD0.24	52	1174	—	—	—

AUSTRALIAN

[illegible]

TINS

[illegible]

COPPER

	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's
—	Messina R0.50	233	28.12	Q10c	ϕ	2.5

MISCELLANEOUS

Dividends Paid		Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's
—		Anglo-Dominion	156	—	—	—	—
—		Barymin	92	—	—	—	—
—		Burma Mines 17½p	14½	575	—	—	—
Aug.	Feb.	Cons. Murch. 10c.	480	28.12	Q100c	ϕ	11.9
—		Northgate C$1	490	977	—	—	—
Jan.	July	R.T.Z.	445	5.11	†11.5	3.4	3.7
	—	Robert Mines	24	—	—	—	—
—		Sabina Inds. C$1	45	—	—	—	—
—		Tara Expln. $1	620	—	—	—	—

NOTES

Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation and unrelieved ACT where applicable; bracketed figures indicate 10 per cent or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Yields are based on middle prices, are gross, adjusted to ACT of 30 per cent and allow for value of declared distribution and rights.

- ● "Tap Stock.
- * Highs and Lows marked thus have been adjusted to allow for rights issues for cash.
- † Interim since increased or resumed.
- ‡ Interim since reduced, passed or deferred.
- ‡‡ Tax-free to non-residents on application.
- ϕ Figures or report awaited.
- †† Unlisted security.
- ¥ Price at time of suspension.
- ¶ Indicated dividend after pending scrip and/or rights issue: cover relates to previous dividends or forecasts.
- ♦ Merger bid or reorganisation in progress.
- ♦ Not comparable.
- ♦ Same interim: reduced final and/or reduced earnings indicated.
- § Forecast dividend; cover on earnings updated by latest interim statement.
- ‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ★ Cover does not allow for shares which may also rank for dividend at a future date. No P/E ratio usually provided.
- ψ Excluding a final dividend declaration.
- ♣ Regional price.
- ‖ No par value.

§§ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. a Tax free. b Figures based on prospectus or other official estimate. c Cents. d Dividend rate paid or payable on part of capital; cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending. q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast dividend: cover based on previous year's earnings. v Tax free up to 30p in the £. w Yield allows for currency clause. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. B Preference dividend passed or deferred. C Canadian. E Minimum tender price. F Dividend and yield based on prospectus or other official estimates for 1979-80. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1978-79. K Figures based on prospectus or other official estimates for 1979-80. M Dividend and yield based on prospectus or other official estimates for 1980. N Dividend and yield based on prospectus or other official estimates for 1979. P Figures based on prospectus or other official estimates for 1978-79. Q Gross. T Figures assumed. Z Dividend total to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xR ex capital distribution.

"Recent Issues" and "Rights" Page 20

This service is available to every Company dealt in on Stock Exchanges throughout the United Kingdom for a fee of £500 per annum for each security

REGIONAL MARKETS

The following is a selection of London quotations of shares previously listed only in regional markets. Prices of Irish issues, most of which are not officially listed in London, are as quoted on the Irish exchange.

			IRISH		
Albany Inv. 20p	28	......	Conv. 9% '80/82	£86¾	—¼
Bertam	18	......	Nat. 9¾% 84/89	£69¾	—¾
Bdg'wtr. Est. 50p	380	+5	Fin. 13% 97/02	£77¾xd	—1½
Clover Croft	60	......	Alliance Gas	60	......
Craig & Rose £1	£11¼	......	Arnott	385	+5
Dyson (R. A.) A	15	......	Carroll (P.J.)	51	—1
Fife Forge	36	......	Clondalkin	104	—2
Finlay Pkg. 5p	22	......	Concrete Prods.	91	—2
Graig Ship. £1	£12½	—¼	Heiton (Hldgs.)	34xd	—½
Higsons Brew	80	......	Ins. Corp.	225	+25
Holt (Jos) 25p	255	......	Irish Ropes	55	......
I.O.M. Stm. £1	152	+2	Jacob	38½	......
Pearce (C. H.)	400	+5	T.M.G.	142	......
Peel Mills	37	......	Unidare	101xd	+3
Sheff. Refrshmt	98	......			
Sindall (Wm.)	165	......			

OPTIONS

3-month Call Rates

[illegible]

FINANCIAL TIMES

Monday March 3 1980

FT SURVEY OF BUSINESS OPINION AND CBI TRENDS

Steel strike hits confidence

BY PETER RIDDELL AND DAVID MARSH

THE TWO-MONTH-OLD steel strike has so far had little effect on the level of production in the rest of British industry. The main impact so far has been to undermine an already very low level of business confidence.

This is indicated by the Confederation of British Indnstry's latest economic situation report and monthly inquiry and the Financial Times survey of business opinion, both of which are published today.

The CBI has been telephoning round big companies each week and there has been little change in the latest inquiry. A few more companies are being affected in some way, but the estimated drop in manufacturing output, excluding British Steel, is still less than 5 per cent relative to planned levels.

The FT survey shows that although some engineering companies are suffering from a shortage of steel or components, others have not yet been affected.

The CBI suggests that this "can be attributed largely to the high level of steel stocks at the beginning of January at a time when demand and output were sluggish and when industry was becoming increasingly overstocked with finished goods."

Looking at the overall prospects, the latest CBI trends inquiry points to "some weakening in orders for manufactured products and lower output expectations." The inquiry was carried out between February 5 and 20.

The downturn in activity so far appears to be gradual rather than dramatic with producers of intermediate goods facing weaker demand than the capital and consumer goods sectors.

Both surveys indicate that in spite of the steel strike, industry has not yet been able ot reduce excessive levels of stocks. A high proportion of companies are reporting more than adequate or high level of stocks of finished goods.

The FT survey, which was carried out at the end of January and in the first fortnight of last month, shows that the level of optimism about the general business situation is at the lowest level for three and a half years.

Apart from a decline in new orders and deliveries, there is general concern about the prospects for exports. Similarly, the CBI's regional offices report "noticeably weaker demand" for exports than at the end of last year.

Details, Page 19

EARNINGS ON CAPITAL

Those expecting earnings during the current year to:—	4 monthly moving total: Nov.-Feb. %	Oct.-Jan. %	Sept.-Dec. %	Aug.-Nov. %	February 1980: Eng'g. (non-elect.) %	Chems. & Oils %	Ship. T'sport. %
Improve	40	40	37	42	36	37	63
Remain the same	25	28	35	35	13	20	6
Contract	32	27	23	19	50	40	31
No comment	3	5	5	4	1	3	—

Japanese 'chips' catch U.S. off guard

BY GUY DE JONQUIERES

JAPAN'S semi-conductor industry has caught its U.S. *competitors off guard* by announcing that it has developed prototype electronic memories capable of storing four times more information than the most advanced components now available.

Known as 256-K Random Access Memories (RAMs), they are designed to store 262,144 binary units (bits)—the ones and zeroes which make up a computer's operating language—on a wafer measuring as little as six millimetres square.

RAMs are used to store operating instructions and other pieces of information needed to operate a computer's central processor. Both NEC-Toshiba and NTT have disclosed that they are working on 256-K versions.

The largest RAM at present on the market, the 64-K, can store just over 65,000 bits. But technical difficulties stemming from the high degree of miniaturisation involved have so far prevented any manufacturer from producing the component in satisfactory quantities.

American companies, almost all of which are working on 256-K RAMs of their own, believe these will be even more difficult to mass produce. For this reason they are cautious about forecasting when they will be on the market.

While most U.S. manufacturers doubt that the Japanese have a lead in the race, they are surprised that they should have apparently caught up so rapidly.

Starting virtually from nowhere in the mid-1970s, the Japanese industry has already captured a substantial share of the U.S. and European semi-conductor markets and is producing 16-k RAMs, the industry's "standard," in quantity.

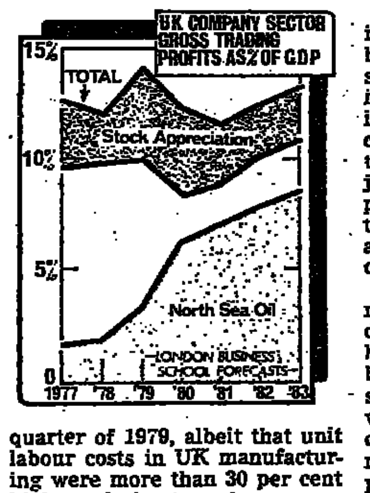
The quality of Japaense products and the aggressiveness with which they are being marketed has severely shaken the self-confidence of the U.S. industry and has led to demands for additional support from Washington.

THE LEX COLUMN

A chill wind from the North Sea

The dramatic impact of the North Sea build-up on the UK non-oil company sector is daily becoming more apparent. Last year the value of North Sea production probably almost doubled to a little over £5bn and in 1980 it could well double again. The effect on the balance of payments and the exchange rate is leading to a profits collapse in the manufacturing sector, and the company sector's financial deficit is shooting up. At the clearing banks, for instance, there is concern at the rapidly rising recourse to overdraft facilities by corporate customers, at a time when the clearers are already deep into the "corset" penalty zones.

So Vickers, for example, is selling off its reprographics business to the French, although not long ago it regarded office equipment as a growth area, while Laird Group is shutting down Patent Shaft Steel, which is rendered hopelessly uncompetitive against imports despite extensive re-equipment. Carrington Viyella has chopped its dividend, is steadily closing down subsidiaries as they run into trouble, and is grimly hoping to staunch the cash outflow. Each day's newspaper brings fresh instances.



Grim for industry

The grim background for industry is minutely examined today in a whole pile of economic forecasts. For the company sector one statistical forecast stands out above all the others: the indication by the London Business School that non-North Sea profits, net of stock appreciation, will drop by 60 per cent in 1980.

Profits were, of course, already becoming sluggish in 1979, with an estimated 6 per cent drop according to the estimate of the LBS. The impact on conventionally reported company results will be masked by the rise in stock appreciation, estimated to have jumped from £3.1bn to £6.6bn in 1979, and likely to stay at around that level this year. Another of the batch of forecasting bodies, the CBI in its economic situation report, calculates that the pretax real rate of return (at replacement cost) achieved by non-North Sea industrial and commercial companies last year was about 3 per cent. Its forecast that the return will drop to a worst ever 2 per cent in 1980 makes it look optimistic by the standards of the LBS.

The CBI economists have calculated that UK competitiveness stabilised briefly in the fourth quarter of 1979, albeit that unit labour costs in UK manufacturing were more than 30 per cent higher relative to main overseas competitors than the average level of 1975. Recently wages and sterling have resumed their contrary trends, however, and an updated estimate last week indicated a decline in competitiveness since 1975 of 40 per cent.

In 1980, according to the LBS, wage costs per unit of output (excluding oil) will rise by 19 per cent. By all normal reckoning sterling should weaken to offset at least part of this. But so it should have done last year, and perversely it strengthened. With so many OPEC surplus billions roaming the world, exchange rate forecasting is anything by a logical science.

All the forecasters are expecting a large rise in the financial deficit of the non-oil company sector. Exactly how large depends, of course, on the extent to which individual companies take avoiding action. In the fourth quarter of 1979, for instance, manufacturers' stocks fell slightly in volume terms (though the book value, thanks to price inflation, still rose some £1.4bn). It was retailers which piled up stocks, presumably because of the poor Christmas selling season.

Over-stocked

In the New Year it had been expected that the rundown of steel stockpiles, after the onset of the British Steel strike, would add to the destocking trend. However, the CBI monthly trends survey for February suggests there has been no real change in manufacturers' stocks since December. It could be that an overstocked distribution system is temporarily blocking the attempts of manufacturers to cut back their working capital. That would be normal enough at this stage of the cycle.

And the National Institute, in its Economic Review appears to be expecting a stabilisation of stocks rather than the destocking anticipated by the LBS or indeed, the Treasury. This is clearly crucial for the level of the financial deficit. In fact, judging by the readiness of companies to shed large sections of their activities, it seems probable that substantial destocking cannot be very far off.

In the City, and the stock market in particular, forecasts do not seem to be quite so bleak. Thus the latest view of brokers Phillips and Drew is still that total pre-tax profits will fall by no more than 5 per cent in 1980. But this figure relates to the historical cost profits reported by all listed companies, taking in not only stock appreciation but also financial and oil profits, together with a large proportion of overseas income. As ICI showed last week, oil is boosting the returns of not only the specialised oil companies.

Protected sectors

Moreover there are many domestic sectors, like breweries or parts of the retailing trade which are fairly easily able to pass on higher costs (in the absence of price controls) and are protected from foreign competition. In any case, some forecasters are still expecting consumer spending to rise a little this year. It is, in the main, the manufacturing sector which is facing the brunt of the storm.

And the weighting of the manufacturing sector in the UK stock market is nowadays comparatively quite small, especially after the relative weakness which was so noticeable during 1979. A once important sector like textiles, for instance, now accounts for only 1 per cent of the capitalisation of the FT-Actuaries All-Share Index.

If all the significant manufacturing sectors are added together, including engineering, chemicals, electricals and pharmaceuticals, they only constitute about a fifth of the All-Share. To put it another way, allowing in addition that many of the companies have large overseas interests, well over 80 per cent of the UK equity market is out of the direct line of fire.

Which is not to say that the banks, for example, can be oblivious to the plight of some of their customers; or that there are not undiscounted shocks to come in the vulnerable areas, lowly valued though these sectors may be.

TUC will seek changes in policy

By Hazel Duffy and Alan Pike

THE TUC will use Wednesday's meeting of the National Economic Development Council to confront the Government with demands for radical changes in its economic policy.

TUC leaders will present their 1980 economic review—an annual exercise which the TUC says has never before had to deal with "such a poor set of economic prospects"—at the meeting.

During the life of the Labour Government, the economic review provided the basis for pre-Budget discussions between union leaders and the Chancellor. But with the change of Government, the TUC decided that the NEDC meeting was the best available platform from which to launch its ideas.

The TUC is demanding an expansionary Budget, with selective, temporary import controls; and end to cuts in public services; and early increases in pensions and child benefits.

A paper from the National Economic Development Office to be submitted to the council will provide an opportunity for discussion on the main issues of contention surrounding the Government's economic policy.

They are expected to include international competitiveness and North Sea oil; the effect of the recession on investment and productivity; and the effect of monetary policy on inflation.

Hunt continues for new shipbuilding chairman

BY JOHN ELLIOTT, INDUSTRIAL EDITOR

THE GOVERNMENT is extending the contract of Admiral Sir Anthony Griffin as chairman of British Shipbuilders for three months in the hope of finding a permanent successor during that time.

Two main candidates are being considered after a hunt lasting nearly a year.

The Department of Industry's simultaneous search for a successor to Sir Charles Villiers as chairman of British Steel has helped to illustrate the problem Ministers have in filling the top jobs of nationalised industries.

No firm candidate has been chosen to succeed Sir Charles, who is due to retire in September. A large number of top industrialists have been approached for ideas, both by the Government and by Russell Reynolds, a firm of head-hunting consultants hired by the Industry Department.

If one of the men now being considered for the shipbuilders chairmanship accepts the £44,000-a-year post, Sir Anthony's contract would end in June. He was to have retired, at his own wish, on March 21.

Mr. Casey: future unclear

Until Sir Anthony's successor is chosen, the future of Mr. Michael Casey, the chief executive and one of two deputy chairmen, will not be clear. Mr. Casey is a former Industry Department civil servant and his contract expires in May.

There is a chance that the new chairman might want to be chief executive as well—as happens in some nationalised industries. Sir Anthony has been a full-time but non-executive chairman, dealing mainly with the corporation's warship building and external relationships.

Mr. Ken Griffin, a former official of the Electrical and Plumbing Trades Union, is expected to be reappointed in the next couple of weeks as the other deputy chairman.

Other board members, including two trade union leaders—Mr. John Chalmers of the Boilermakers and Mr. Ken Baker of the General and Municipal Workers—are also expected to be reappointed.

Continued from Page 1

Chemicals

materials because they were cheaper.

In 1978 two plastic materials used in packaging, low-density polyethylene and polypropylene, were cheaper than glass containers, paper and board, tinplate or aluminium plate.

In that year plastic material prices were too low to give adequate profits to petrochemical companies.

The report identifies other factors influencing use of petro*chemicals as opposed* to traditional materials. Some are unfavourable to the industry's growth.

These include:

- Investment costs. A switch from traditional to petrochemical in, say, packaging might be expensive in new equipment.
- Safety and pollution laws. Some products have been banned. Expandable polystyrene insulation is barred in French schools because of fire hazard.

Factors favouring petrochemicals are:

- Better hygiene standards.
- Labour-saving.
- The growing number of women working outside the home leads to greater demand for pre-packaged freezer foods.

Labour's Left challenges MPs

BY ELINOR GOODMAN, LOBBY STAFF

LABOUR LEFT-WINGERS yesterday challenged Labour MPs to stand as independents at the next election if they were not prepared to stand by party conference decisions.

The Campaign for Labour Party Democracy, the pressure group which claims responsibility for having persuaded the last party conference to accept the idea of mandatory re-selection of MPs, published proposals for changing the party's rules which, if enforced, would effectively prevent many Labour MPs standing under the Labour banner again.

Publication coincided with successes by the Left in the Barnsley constituency Labour Party at the weekend which could make it impossible for Mr. Roy Mason to be re-selected by his local party as candidate for the constituency which he has represented for 27 years.

Failure to be re-selected might provoke Mr. Mason into standing as an independent — so resulting the kind of split in the party which most Labour MPs dread.

Mr. Les Randall, CLPD chairman, said yesterday that Labour MPs who wanted to put a consistently independent point of view should stand as independent candidates.

His campaign's proposals are designed to ensure that party candidates toe the official party line. Under them, all candidates would have to sign an official declaration that they would abide by party policies and the Parliamentary Labour Party would have to produce a detailed *report of its activities for the* approval of conference each year.

Behind the Barnsley "wipe-out," Page 6

Two years recession

Continued from Page 1

above £8bn

A striking feature of the forecasts is the belief that at best it will take several years for an improvement to occur.

Even the Business School, which believes that tight control of the money supply through a medium-term financial plan will cut inflation, thinks the rate will not be back in single figures for at least two years.

It warns that the prospects for the next four years are considerably worse than for the last four.

The Institute believes that unless present policies are changed there is a possibility of a gradual but irresistible drift into selective import controls.

All the forecasters expect unemployment to continue to rise throughout the first half of the 1980s, after an increase of between 350,000 and 400,000 this year, and a further 250,000 in 1981.

A similar view is taken by a number of leading City analysts.. Stockbrokers Phillips and Drew produce projections this morning in line with those of the other forecasters, and urge the Chancellor to help companies by reducing employers' national insurance surcharge in the Budget.

Weather

UK TODAY

MOSTLY DRY and rather cold, except for Scotland and Northern Ireland.

London, Cent. S. England, Midlands, N. and N.W. England
Mostly dry. Frost at first. Rather cold. Max. 7C (45F).

S.E., E. and N.E. England
Wintry showers at first. Sunny periods. Max. 6C (43F).

S.W. England, Wales, Channel Islands, Isle of Man
Mainly dry, with sunny periods. Rather cold. Max. 8C (46F).

S. Scotland, Cent. Highlands, N.W. Scotland, N. Ireland
Mainly dry after early frost. Max. 8C (46F).

N.E. Scotland, Orkney, Shetland
Mostly cloudy, rain in places. Max. 6C (43F).

OUTLOOK: Mostly dry

		Y'day midday °C	°F			Y'day midday °C	°F
Ajaccio	F	14	57	Lisbon	R	11	52
Algiers	F	22	72	Locarno	S	8	46
Amsdm.	F	7	45	London	C	8	46
Athens	F	12	54	Luxmbg.	S	4	39
Bahrain	S	23	73	Luxor	S	18	64
Barclna.	S	15	59	Madrid	S	14	57
Beirut	R	8	46	Majorca	S	15	59
Belfast	C	9	48	Malaga	C	17	63
Belgrd.	C	8	46	Malta	S	17	63
Berlin	R	5	41	M'chstr	F	8	46
Biarritz	F	10	50	Melbne.	S	23	73
Bmghm.	F	8	46	Milan	C	8	46
Blckpl.	C	7		Mntreal	C	−20	−3
Blackpl.	C	7	45	Moscow	F	−3	27
Bordx.	C	5	41	Munich	F	7	45
Boulgn.	C	6	43	Nairobi	C	20	69
Bristol	C	7	45	Naples	C	14	57
Brussels	F	6	43	Nwcstl.	R	4	39
Budpst.	S	8	46	N. York	S	−8	17
B. Aires	S	33	91	Nice	C	13	55
Cairo	S	14	58	Nicosia	F	9	48
Cardiff	F	8	46	Oporto	F	18	64
Cape T.	S	24	75	Oslo	S	0	32
Cologne	F	6	43	Paris	C	8	46
Cpnhgn.	S	3	37	Perth	S	36	95
Corfu	S	15	59	Prague	F	5	41
Dublin	C	9	48	Reykjvk.	C	1	34
Dbrvnk.	S	13	61	Rhodes	S	10	50
Ednbgh.	F	6	43	Rio J'o	S	36	95
Faro	Th	16	61	Rome	S	14	57
Florence	C	13	55	Salzbg.	S	10	50
Frankft.	C	5	41	Singapr.	S	30	87
Funchal	C	17	63	Stckhm.	S	0	32
Geneva	S	8	46	Strasbg.	F	6	43
Gibrltr.	C	15	59	Sydney	R	27	81
Glasgow	C	7	45	Tehran	C	4	40
G'rnsey	C	7	45	Tel Aviv	C	11	52
Helsinki	Sn	−2	28	Tenerife	S	12	54
H. Kong	C	15	59	Tokyo	S	9	49
Innsbrk.	F	7	45	Toronto	S	−12	10
I.o.Man	C	8	46	Tunis	S	17	63
Istanbul	S	3	37	Valencia	F	16	61
Jersey	C	7	45	Venice	C	6	43
Jo'burg	C	24	75	Vienna	S	9	48
L. Plms.	F	17	63	Warsaw	C	2	36

C—Cloudy. F—Fair. Fg—Fog. R—Rain. S—Sunny. Sl—Sleet. Sn—Snow. Th—Thunderstorm.

Plan to boost EEC spending in Britain

BY MARGARET VAN HATTEM IN BRUSSELS

A TEAM of senior British officials, led by Sir Michael Palliser, Permanent Under Secretary at the Foreign Office, will visit Brussels this week to discuss ways of spending more EEC money in Britain.

Their talks will focus on a detailed programme of energy, transport and infrastructure projects in depressed regions. The EEC Commission, in collaboration with UK officials, has been drawing up the programme since the EEC summit in Dublin last December.

The programme, which would be financed through a special chapter in the Community Budget, will be put before the EEC summit meeting in Brussels in four weeks. Commission and British officials hope it will prove an acceptable means of cutting Britain's net contribution to the EEC Budget. They also hope other EEC government heads will be prepared to allow Britain substantially more than the £350m offered to Mrs. Margaret Thatcher, the British Prime Minister, in Dublin.

But Britain faces an uphill struggle if progress is to be made at this month's summit.

Last week brought indications not only that the budget problem is likely to be bigger than foreseen—the latest Commission estimates suggest the net UK contribution to this year's Budget will exceed substantially the forecast £1.2bn—but also that Britain's relations with its EEC partners are under strain.

President Valéry Giscard d'Estaing said on French television last week that Britain need expect no Budget concessions until it was prepared to give ground to France on farm spending, lamb trade and fishing rights.

Chancellor Helmut Schmidt, of West Germany, whose support is essential to Britain, is believed to have responded coolly to Mrs. Thatcher's suggestion on BBC Television that Britain might withhold payments to the EEC if its Budget demands were not met.

Brussels officials said any progress at Mrs. Thatcher's talks with Herr Schmidt in London last Monday was probably undone by her threat.

More general irritation with the UK surfaced later in the week when Sir Michael Butler, Britain's Permanent Representative with the EEC, tried to persuade other EEC ambassadors to adopt a harder line against EEC butter sales to the Soviet Union. He received an emphatic, and unanimous "No."

This irritation could also count against the UK at today's meeting of Farm Ministers in Brussels. The commission, in an attempt to defuse the Anglo-French lamb dispute, will propose paying temporary subsidies to French sheep farmers to offset a drop in prices once illegal curbs to British lamb imports are removed.

Most EEC members support Britain's insistence that France should obey a European Court of Justice ruling and drop the curbs. But they are clearly fed up with the prolonged dispute, which is undermining the standing of both the court and the commission. They may press Britain to accept a temporary compromise.

However, since both Britain and France regard the lamb issue as negotiating capital in the larger budget dispute, neither is likely to give much ground.

The Farm Ministers are expected to review the commission's proposals for this year's farm prices, though no firm negotiations are expected before early summer.

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